VA'S MEDICAL, PROSTHETIC AND REHABILITATION RESEARCH PROGRAMS

HEARING

BEFORE THE

SUBCOMMITTEE ON
HOSPITALS AND HEALTH CARE

OF THE

COMMITTEE ON VETERANS' AFFAIRS
HOUSE OF REPRESENTATIVES

ONE HUNDREDTH CONGRESS

FIRST SESSION

SEPTEMBER 9, 1987

Printed for the use of the Committee on Veterans' Affairs

Serial No. 100-27

U.S. GOVERNMENT PRINTING OFFICE
78-748 ⇆ WASHINGTON : 1987

For sale by the Superintendent of Documents, Congressional Sales Office
U.S. Government Printing Office, Washington, DC 20402

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VA'S MEDICAL, PROSTHETIC AND REHABILITATION RESEARCH PROGRAMS

Wednesday, September 9, 1987

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON HOSPITALS AND HEALTH CARE,
COMMITTEE ON VETERANS' AFFAIRS,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9 a.m., in room 334, Cannon House Office Building, Hon. G.V. (Sonny) Montgomery (chairman of the subcommittee) presiding.

Present: Representatives Montgomery, Penny, Rowland of Georgia, Kennedy, Stump, and Rowland of Connecticut.

OPENING STATEMENT OF CHAIRMAN MONTGOMERY

Mr. MONTGOMERY. Good morning. It is 9 a.m. and the subcommittee will come to order.

We are meeting this morning to receive testimony on the Veterans' Administration's program of medical research. I don't believe many are aware of how much the VA's research programs have contributed, not only to veterans but to the general public as well. For example, two VA scientists received Nobel Prizes for medicine in 1977. VA scientists have received awards for research on hypertension, discovery of leukemia and cancer-inducing virus in animals, development of the concept of the CAT Scanner, and development of the omni-directional wheelchair.

We are seeking specific information regarding highlights of VA research activities as well as the relationships and relative emphasis between the programs of biomedical, prosthetic and rehabilitation, and health care services research including, one, the organizational structure; two, internal resource allocation decisions; three, the budget process; and four, merit review and research project funding decisions.

We are interested in the practical linkages between research and patient care and education; the process for identifying and supporting special programs of research particularly prevalent among veterans; the allocation of funds among the three medical research programs from the VA/DOD cooperative research program; and the relationship between the research programs and other research activities of the VA such as geriatric research, education, and clinical centers.

The ranking member on the minority side, John Paul Hammerschmidt, has a conflict and he won't be here this morning. Without objection, his statement will be put in the record.

[The statement of Hon. John Paul Hammerschmidt appears on p. 41.]

Mr. MONTGOMERY. At this time I would like to call to the witness table Dr. John Gronvall, Chief Medical Director, Veterans' Administration. John, would you also introduce those other individuals with you.

STATEMENTS OF JOHN A. GRONVALL, M.D., CHIEF MEDICAL DIRECTOR, DEPARTMENT OF MEDICINE AND SURGERY, VETERANS' ADMINISTRATION; ACCOMPANIED BY RICHARD GREEN, M.D., ASSISTANT CHIEF MEDICAL DIRECTOR FOR RESEARCH AND DEVELOPMENT; MARGARET J. GIANNINI, M.D., DIRECTOR OF REHABILITATION RESEARCH AND DEVELOPMENT; RICHARD F. LEVINE, M.D., ASSOCIATE CHIEF OF STAFF FOR RESEARCH, VA MEDICAL CENTER, WASHINGTON, D.C.; AND ROBERT L. OWEN, M.D., CLINICAL INVESTIGATOR, VA MEDICAL CENTER, SAN FRANCISCO, CA

Dr. GRONVALL. Thank you very much, Mr. Chairman. It is a great pleasure for us to be here. Let me introduce the people here at the head table with me.

Starting to my left is Dr. Richard Levine, who is the Associate Chief of Staff for Research at our VA Medical Center here in Washington. Immediately next to me on my left is Dr. Richard Green from the Central Office. He is Assistant Chief Medical Director for Research and Development. To my right is Dr. Robert Owen, who is a clinical investigator from our VA Medical Center in San Francisco, CA. On my far right is Dr. Margaret Giannini, Peg Giannini, who directs the rehabilitation research and development activity in the Central Office.

Mr. MONTGOMERY. Dr. Gronvall, I believe that Dr. Giannini received some type of award, a Presidential commendation, for her work. I want to congratulate her. Let the record show we're very proud of her accomplishments.

Dr. GRONVALL. Thank you. That is one of many recognitions and awards that Dr. Giannini has received over the years. We are very proud of her efforts in the VA.

I have submitted a detailed and long statement, which I would like to ask be included in the record.

Mr. MONTGOMERY. Without objection, so ordered. Your full statement will be put in the record.

[The prepared statement of Dr. Gronvall appears on p. 42.]

Dr. GRONVALL. Thank you very much.

In a few minutes, then, I can summarize the VA's research program, although it is hard to summarize such a large and complex program. During the 41 years that the VA has had a formally organized research program, it has grown to the point where it is now internationally recognized as a major contributor to medical science and the advancement of practice in all areas of medicine. Virtually every issue of any major medical journal now will contain a substantial contribution from one of the VA's researchers, and it is very clear that these research contributions improve the quality of life for thousands of veterans, save many lives, and that this is the direct benefit of the VA's research program.

There are also, of course, many other indirect benefits that accrue from this active research program. Our VA research scientists are, in a sense, the gatekeepers of the Department. Through their research contacts they keep abreast of the latest medical advances and make the new technology available to our veteran patients at the earliest possible time. It is clear that the active research program in our medical centers creates a spirit of inquiry among the medical staff that is, we believe, the best single means of assuring that veteran patients receive the highest quality medical care. These active research programs also help us to recruit and retain the very best physicians.

Let me comment on two features of our research program that we believe make it so successful. First, by very conscious design, our research program primarily supports the work of the VA physician researchers. Over 70 percent of the investigations funded by VA research are carried out by VA physicians who are directly involved in care of patients as well as in doing research.

This aspect of our research program creates a direct linkage between patient care going on in our medical centers and the VA research activities, and this keeps our research program directly relevant to the medical care of veteran patients.

The second feature I would comment on is the rigorous system of peer scientific review that we utilize to determine where to invest our research dollars. All proposed research studies in the VA are carefully evaluated by committees of nationally eminent scientists from outside the VA, and we utilize this peer review system then to make judgments about which research to support and which research will most likely make a significant scientific contribution.

Let me just comment very briefly on the three areas of research that we support. These are the medical research program, the health services research and development program, and rehabilitation research and development. Each of these three activities is a separate line item in our appropriation. Our funds are allocated to these research activities based on the line item in the appropriation as made by Congress.

First our medical research program provides a balanced program of investigation in both basic medical sciences and in clinical research in medicine, mental health, and surgery. At the present time some 2,500 investigators are supported by these appropriated funds, and about an equal number are supported from other sources such as other Federal agencies, foundations, or in support from industry. The detailed kinds of research supported by our medical research service are described in our full statement.

The second area of research, rehabilitation research and development, has a specifically focused mission to improve the quality of life for impaired, disabled and handicapped veterans. This is accomplished by a program of research and development and evaluation focused on devices, techniques and concepts of rehabilitation.

Our third area of research, the so-called health services research and development, is a field of investigation that focuses on identifying the most cost-effective ways of providing health care services to veteran patients. This service focuses on major health issues such as care of aging veterans, preventive health care, rehabilitation

services, improving VA operations, and evaluating the cost effectiveness of various patient care technologies.

I would just make—

Mr. MONTGOMERY. Dr. Gronvall, would you go over the three types of research that you do again?

Dr. GRONVALL. Yes, sir. The first is medical research; second, rehabilitation research and development; and third, health services research.

Mr. MONTGOMERY. Briefly tell us what each of these do.

Dr. GRONVALL. All right.

Medical research basically supports a large number of both basic and clinical investigations, largely projects described by investigators that cover the broad spectrum of medical research, surgical research, mental health research, all of the areas that face our veteran patients.

Rehabilitation research focuses on handicapped veterans, prosthetic research, development of new devices to assist the blind or otherwise handicapped veterans.

Health services research focuses on what kind of medical care is most cost effective, and the evaluation of new technology when there are new devices or new diagnostic techniques available. Health services research investigates the cost benefit analysis of delivering care in various ways to our veteran patients.

The final comment I would make has to do with AIDS. I do this largely because of the great national interest and concern about AIDS. The VA is very actively engaged in AIDS research. People here at the table with me are personally involved and can expand on that during the question and answer session.

We are investigating the basic mechanisms by which the AIDS virus infects individuals and causes the loss of immunity that then leads to complex infections. Other investigators are evaluating the rare cancers that occur so frequently in people infected with the AIDS virus. The VA is also actively engaged in testing some of the new drugs that have been developed which may hold some promise in interfering with the progression of the AIDS disease. So AIDS research is a major, growing and very important focus of our overall VA research program.

Finally, Mr. Chairman, I believe that by any measure VA's research program is a success story, and so it is a particular delight for us to be at this hearing to have the opportunity to describe our research program, the accomplishments that have been made, and we would be pleased to respond to any questions that you or the other committee members may have.

Thank you very much.

Mr. MONTGOMERY. Thank you, Dr. Gronvall.

Actually, one of the reasons we're having this hearing this morning is to get more information, more publicity, and more good reports from the VA about the research that takes place in different VA facilities across the land. I have always been concerned that we don't publicize enough the work you have done over the years. When I go to these great veterans organizational conventions—I went to San Antonio and also New Orleans—I spend more time talking about the VA medical research that we have done over the years. I can see these veterans kind of look up, they didn't know

that we've done all that. So that is one of the reasons, to publicize what we have done, not only for the veteran but—and you can comment on this later—that this information and this research we do goes out to other medical research groups, to Social Security and the aged. So the word gets out. We pass it on and we don't guard it.

Dr. GRONVALL. Absolutely. All of the research that's done is described in scientific publications which appear in the major scientific journals. So the results of our research are made available to other physicians and scientists, not only throughout this country but throughout the world, through the scientific literature.

Mr. MONTGOMERY. Before calling on the members, I believe I will call on Dr. Owen, who has headed up some of the studies and research on AIDS. I believe he is the only other panelist who has a statement.

Dr. GRONVALL. Yes. Dr. Owen.

STATEMENT OF DR. ROBERT L. OWEN

Dr. OWEN. Good morning. I have provided a written statement, which you may wish to include in the proceedings.

Mr. MONTGOMERY. Without objection, we will put it in the record.

Dr. OWEN. I have some comments that I think may be of interest to the members of the panel.

In our approach to AIDS, many times it has been emphasized what a great burden this has been to the country and its extreme burden and cost to the individuals with AIDS and to their families. But there are also benefits to the country in general, in addition to science. It has really been a two-way street dealing with AIDS.

As we have geared up to really deal with the AIDS crisis, we have developed new strengths and new tools which will be of help to people with a variety of health problems throughout the VA and throughout the population in general.

I have given some examples here. One of them is that we have begun to understand the immune system much better. An analogy that I could make is that many times we would not be aware that we have a carburetor in our cars when they are functioning well to get us from here to there. When the car starts running badly and jerking and stopping, you can sometimes become acutely aware that you've got a carburetor.

Similarly, we really weren't aware how much the immune system was doing for us day in and day out before AIDS came along. When we realized in looking at these poor individuals who have AIDS, that so much was going wrong with them, they were developing a variety of kinds of cancers that we didn't know were under immune control but which we now realize are kept down or prevented from occurring in all of us by having an active immune system.

Similarly, we really didn't realize the span and numbers of kinds of infectious agents that are going along in the world. We're coming in contact with them all the time and we never know about it. We get these infections, our immune system takes care of them, and it doesn't bother us with the messy details. So now, when the

immune system isn't working, we have realized just how critical it is to the day-to-day functions for all of us. This has given us a new insight into the way the body works that will help us many times, I think, in the future in preventing cancers, for dealing with infections. There are some immediate concrete ways that AIDS has begun to help the general veterans population and others as we have improved our diagnostic techniques to deal with some of the infections in the AIDS patients, such as the infectious agents cryptosporidium and microsporidium, which is described in my statement.

We have developed a new lab capability to diagnose such things for the AIDS patients, and when we started using this new capability, we realized that others were having these infections that had been previously considered rare or exotic somehow. We had previously thought that parasites were something that happened somewhere else. But they are really part of our day-to-day life here, particularly cryptosporidium. We now realize that this causes infectious diarrhea in kids in daycare centers, farm workers, veterans who are out hunting and in the field and drinking water from streams.

Mr. MONTGOMERY. What was that?

Dr. OWEN. Cryptosporidium, as in cryptic or hidden, because it was hard to find. Now that we have found it, we can begin to understand it. And then microsporidium, which is a new one, it is called microsporidium because it's very tiny. So far we only know how to find that one with an electron microscope. We are trying to develop better diagnostic techniques so that we can pick that one up, too.

I was able to pick it up because I had had extensive training through the VA when I began as a medical student at Harvard and first went to the West Roxbury VA and then at the San Francisco VA I was trained in ultrastructural techniques. And after 15 years of looking at the intestine and its defense systems, I was prepared to know what these things ought to look like. So when AIDS came along and I looked at the wall of the intestine in patients with AIDS, then I knew there was something there that shouldn't be there and recognized microsporidium, a new parasite.

So the VA, in its training program, has prepared me to have this information, and as we have developed new information in our laboratory, we have made it available to others.

In addition, as we have developed this additional information about how to deal with AIDS patients on a day-to-day basis, we have communicated this. I think something that should be emphasized is the partnership between medicine at the VA and the private sector. Sometimes some people appear to think there is a conflict in interest in patients going to the VA rather than private. But I think that the partnership should really be emphasized.

We have the strength in the VA, because of the number of institutions and because of the research and education programs within the VA, to develop new information. As soon as it's available, it is communicated in a wide variety of ways. Individual investigators go to community hospitals and explain the methods of patient care that have been devleoped, the information that's been developed,

and there is a really a partnership between the VA and the private medical sector.

There are special areas which are of particular interest, but the great strength of the VA is in its diversity and its tradition of supporting the best in basic medical science and in investigator-initiated research. Those of us who are working with patients on a day-to-day basis see their problems, see the areas where there is no knowledge, or where there is too little knowledge, and we come up against our powerlessness. Patients say to us often, you know, "Gee, Doctor, you just know everything about everything. I know you're going to take care of me." It's like when I ride on an airplane. I have to believe that I have the soberest and best pilot in all of America flying that plane as it's heading toward Washington. Similarly, patients have to have that same feeling. It is fine for them to have that feeling, but we don't have that feeling because we know there are big gaps. I think it is important to maintain the physician-initiated research program.

Also, when physicians have selected a project to work on, their heart is really in it and they throw everything they've got into trying to get the answers out of that.

Also, with physician supported research or continued research, the physicians being aware of the problems when they're reading in areas that are related—or may not even appear to be related—they can see relationships and they can pull from different areas for problems. That is one of the advantages of having physician investigators.

[The prepared statement of Dr. Owen appears on p. 62.]

Mr. MONTGOMERY. Thank you very much, Dr. Owen.

The Chair will operate under the 5-minute rule and as to the way you came in the committee hearing.

Dr. Rowland?

Dr. ROWLAND of Georgia. Thank you very much, Mr. Chairman.

I want to just compliment you on having this hearing today because I think it is so appropriate at this time, particularly with the age problem that we have, to focus on research that is taking place. As you know, I had the opportunity to have a hearing, or be at a hearing, in San Francisco where we focused on AIDS and the research that was taking place there. While I was very pleased with what was taking place with reference to research in AIDS, I was excited about the relationship that exists between the teaching institutions out there and the veterans' hospitals.

I had the opportunity to visit Palo Alto and the relationship there between that hospital and Stanford, and also the relationship between the School of Medicine of the University of California at San Francisco and the Veterans' Administration hospital there. We had conferences with some of the people of both sides there about research that was taking place. I just think it is really tremendous what is going on there.

Dr. Owen, I know that you were not able to be there because you had a conflict at the hearing that we had, but I was very pleased to have the opportunity to listen to Dr. Rudy Schmidt, Dean of the School of Medicine there, and Dr. Albert Jones, who has some theories about the immune globulins and the possibility of developing vaccines specifically with reference to IGA. We talked about that a

good bit, and you outlined some of that in your testimony here. So I was just very pleased with what was taking place out there.

Let me ask you, Dr. Gronvall, and maybe Dr. Owen too, about research and about the fruits of research. How do you make a determination as to whether or not funds are being appropriately expended in research? You may be working very hard trying to achieve some goal. For example, maybe we are looking for an antiviral agent now. We know that AZT, while it may be virustatic, is not virucidal, and we are trying to move into an area of finding an antiviral drug that might kill this virus. But that may be a long way off.

How do you determine whether or not the research that is going on is really fruitful, if it is doing what it is supposed to be doing? You know, sometimes in research you may be looking for one thing and you find something else totally unrelated. It is a discovery in another area. Would you comment on that some?

Dr. GRONVALL. Yes, I would be very pleased to, and I will ask Dr. Green to amplify.

I believe the cornerstone of assuring that the research that is going on is of high quality is the peer review system that is used to review proposals when they are first developed. We have thousands of investigators in the VA who are attuned to problems that need to be worked on in the way that Dr. Owen just described. They develop research proposals which come into Washington and in every case those proposals are reviewed objectively by committees of expert scientists, primarily from outside the VA, so that, again, we have not developed an inbred system but we turn to the best scientific experts that we can find.

They review each of the protocols in detail and rank them on the basis of the importance of the question being addressed and the scientific rigor with which the proposal is going to be carried out. Once a proposal is funded after that competitive review, we have follow-up reports that are submitted about the project. The scientific accomplishments, of course, are published in scientific journals where the report is reviewed by the editorial board of a journal, so it is given a very intense scrutiny. Then, as the investigator applies for subsequent funding or for a new project or an extension of the project, that again is peer reviewed.

So, during the whole course of an investigator's career, the accomplishments of the investigator are subject to rigorous scrutiny by panels of scientific experts at the beginning of each project, and the reports that are prepared are scrutinized by the editorial boards of the scientific journals.

So I think you have to look at the long totality of review that goes on of every investigator's work at a number of checkpoints as the years progress.

Dr. Green, you may want to add a word or two to that.

Dr. GREEN. If I could just add to that, 70 percent of the proposals being reviewed are renewals, people who are already supported and they are now up for renewal. Typically, investigators are supported between 3 to 5 years, and then they must come in again to renew their award.

The review process in looking at such renewals looks very heavily at productivity—what did you do in the last 3 to 5 years, and the

currency of research is published in papers in peer review journals of high quality. The quality of those publications is scrutinized very carefully by the peer review process. If someone has been productive and has a good future, those are the people that continue to get support.

But one can't just have ideas and not produce, and the production in terms of peer reviewed, scientifically high quality papers are very carefully evaluated by these peer review committees.

Dr. ROWLAND of Georgia. The literature, then, reveals a great deal about whether or not the research is cost effective?

Dr. GREEN. Absolutely.

Dr. ROWLAND of Georgia. Okay.

Mr. Chairman, I have several more questions but I will pass at this time.

Mr. MONTGOMERY. Fine. Why don't we move around and then we will come back to you.

Mr. Penny?

Mr. PENNY. Thank you, Mr. Chairman.

I don't have any questions. Do you want to move on to others, or could I yield my time to Dr. Rowland?

Mr. MONTGOMERY. Why don't we move around and then come back, if that will be all right. Of course, you can yield your time.

Mr. PENNY. I would yield it to Dr. Rowland since he had some follow-up questions. That way he can stay with his line of questions.

Mr. MONTGOMERY. Okay. Why don't we go ahead and see if Mr. Stump has any, and then I have a few, and then we will come right back to Dr. Rowland.

Bob Stump?

Mr. STUMP. I have no questions.

Mr. MONTGOMERY. Let me ask Dr. Levine about the cooperative research, medical research, between the VA and the DOD. Mr. Tony Batista, do you know him, Dr. Levine?

Dr. LEVINE. Yes, sir.

Mr. MONTGOMERY. You did some work with him on his father, or was that somebody else?

Dr. LEVINE. One of our physicians took excellent care of his father and was helpful to the family with their medical problems.

Mr. MONTGOMERY. Then it paid off for the VA system, in that we found out you have done a number of DOD matters, to get the DOD to help fund that research, and we were able to get $25 million, I believe, this last year. It is in the bill for $20 million this year.

You might elaborate on how that is working, for the record.

Dr. LEVINE. I think Dr. Green, since this is an appropriation to the entire VA research program, can better answer.

Mr. MONTGOMERY. Okay.

Dr. GREEN. That program has been a critical asset to the research program at the VA. The funds that were transferred from the DOD have been invested in support of some 90 VA research projects selected by our colleagues at the DOD. Our medical and research colleagues looked through our portfolio of research and selected for this first year, fiscal year 1987, those projects that they believed to be the most important VA research for the DOD. That

really includes research in all areas of medicine, surgery and psychiatry. But the DOD clinicians and researchers are especially interested in such areas as radiation biology, infectious disease, blood clotting, blood replacement, problems that affect the active military service in the field. But they, of course, care for a broad spectrum of medical problems. These 90 projects that were identified for this first year really cover a broad spectrum.

Now, as you know, for fiscal 1988 we have solicited special collaborative studies between VA and DOD scientists. This is really a very exciting new opportunity for VA scientists to work directly with DOD scientists in collaborative studies of importance to both agencies. The first 100 such proposals have been submitted to the VA for review. They are under review at the moment for funding in fiscal year 1988. I think that this 1987 Defense Appropriation Act has really created a totally new collaborative effort which didn't exist before and really has, and will in the future, provide a mechanism to bring DOD and VA scientists together on multiple projects. It's very exciting to us.

Mr. MONTGOMERY. Dr. Green, are the DOD researchers and medical personnel fairly satisfied with what's taking place?

Dr. GREEN. I believe there was a report required by the 1987 law that the Secretary of Defense recommend future activity in this collaboration. That report by DOD scientists was very favorable and recommended that it continue. My contacts with the DOD colleagues in research have been very supportive.

Mr. MONTGOMERY. That $25 million that I believe you got in 1987, that money basically was used in the VA on DOD areas that you mentioned; is that correct?

Dr. GREEN. That's correct.

Mr. MONTGOMERY. So it was used, and then that information is passed back to the DOD?

Dr. GREEN. Absolutely.

Dr. GRONVALL. Mr. Chairman, if I may add a sentence or two to that, over recent years, as you well know—because you have sponsored it—we have had a very rapidly expanding working relationship with the Defense medical people and the Department of Defense hospitals. This added dimension of collaboration in research I think rounds out that relationship and strengthens it enormously, so that we are not only sharing our patient care capabilities in the VA with the Defense Department, but we're actively collaborating in research that will improve the quality of care both to veterans and to active duty military. So it has been a very desirable working relationship.

Mr. MONTGOMERY. For my colleagues, several years ago we did pass what is known as a sharing agreement between the VA hospitals and the DOD medical facilities that are in close vicinity in certain areas of the country. It is really working well. It is not only bringing better patient care to both the military and the VA patients—and correct me if I'm wrong in this—but it also saves the taxpayers some money and you don't have to buy extra equipment that might be in one hospital that you don't need and provide it for the other hospital.

Is that basically correct?

Dr. GRONVALL. That is absolutely correct.

Mr. MONTGOMERY. I would like to ask Mr. Penny to take the Chair for a few minutes. I yield to Mr. Penny.

Mr. PENNY. Mr. Chairman, I believe Dr. Rowland has some of my time, and maybe some of Mr. Stump's time, if he so desires to use it to follow up on some of his questions.

Mr. MONTGOMERY. Dr. Rowland.

Dr. ROWLAND of Georgia. I want to follow up on what the Chairman was just talking about, the relationship between the DOD and the Veterans' Administration, and expand on that some. I think the AIDS problem we have is certainly focusing a lot now on the relationship between various areas—DOD, NCI, NIH, the Veterans' Administration.

Can you give me some information as to how research is being coordinated at this time between these various agencies if, in fact, it is being coordinated? Do you think that we should have some type of effort in the country to attack the AIDS problem, a project that would bring all areas of research together, both private and on the Federal level, to address the AIDS problem?

Dr. GRONVALL. Let me make a number of comments. You have asked a very broad question, of course.

In regard to collaboration between agencies involved in AIDS research, there are several mechanisms that exist. Specifically between the Veterans' Administration and the Department of Defense, we have an AIDS Coordinating Committee that is cochaired by a person from the VA staff and a person from the Defense Department. That committee meets regularly. The committee reviews not only research activities but patient care activities, because individuals in active military duty who become infected with the AIDS virus and then develop AIDS as a disease in many instances become veteran patients that the VA is responsible for taking care of. So we have wanted to collaborate very closely with the military as their testing experience expanded, so that we would know how many military personnel are infected with the virus, and what the potential medical care implications of that would be for the VA. I think we have done that very well.

At a broader level, there is a so-called Intergovernmental Coordinating Committee on AIDS, primarily dealing with AIDS research, but also AIDS care and educational issues. The VA is actively represented on that body. It again meets regularly and has representatives from the Public Health Service, the Veterans' Administration, Department of Defense, other Federal agencies that are actively engaged in various programs in regard to AIDS.

Finally, I would mention the White House work group on health policy. This is a body that makes recommendations and reports to the Domestic Policy Council. The White House work group has taken an active role in regard to a number of AIDS matters, particularly most recently in regard to AIDS testing. So the White House work group has deliberated repeatedly on AIDS matters and has made recommendations to the Domestic Policy Council regarding Federal policies in relation to AIDS. So I think there is a good deal of effort going on, coordinating all of the various Federal activities having to do with AIDS.

Dr. ROWLAND of Georgia. Are you saying then that research in the Veterans' Administration, NCI, NIH, and DOD is coordinated by this White House working group?

Dr. GRONVALL. I think the primary coordination is at the administrative level—that's what I've been describing—between representatives of each of the Federal agencies that are involved in research.

I might ask Dr. Green to comment at a more detailed level on the planning or review of individual research projects, as to how there is coordination.

Dr. GREEN. In AIDS, and in all other areas, the VA has a representative on each NIH council. I am the representative of the VA on the National Cancer Institute Council, and I am a member of the special task force of the NCI on AIDS. So that is sort of a personal way in which the VA's research activity gets linked and coordinated with NCI.

Just to follow up on what Dr. Gronvall mentioned on DOD, the fact that we've had for 2 years a working group between DOD and VA clinicians and researchers on AIDS specifically alerted us to the fact in fiscal 1986 that DOD got $40 million unexpectedly for AIDS research. We immediately identified our VA researchers who were working in AIDS and they applied for this money. We had two major studies funded by DOD in AIDS research.

As you know, the AZT trial in patients who have less than full-blown AIDS that is going on in the VA is funded by the VA and DOD through that mechanism, as is another large-scale study of the effects of HIV on the nervous system of patients who have early infection on the natural history of the involvement of the central nervous system. So these working groups not only share general information but there are really very specific kinds of opportunities which we are always looking for to take advantage of the availability of resources from other agencies such as DOD.

Mr. MONTGOMERY. Would the gentleman yield?

Dr. ROWLAND of Georgia. Yes, I would yield to the Chairman.

Mr. MONTGOMERY. We passed the appropriation bill, and I got it on the floor—and we have the Rowland Commission on AIDS pending over on the Senate side. But in the Natcher bill there was a billion dollars for research on AIDS, but there wasn't any of it earmarked for the Veterans' Administration. I got the impression, if I would have known about it, they would have earmarked some money for the Veterans' Administration.

My question is, how do we get the Senate to amend it over there? Do you have a guarantee that NIH and some of the other agencies that have earmarked this money are going to come to the VA, because you're the second largest research division of the Federal Government, and as you said, Dr. Owen, you've got the people to work on it, people who have got the problem. We have really a closer touch with the situation than most other agencies of the Government.

Dr. Gronvall.

Dr. GRONVALL. Well, I believe the answer is that I'm not aware of any specific earmarking in any of the NIH or DOD funds that would direct or assure that they come to the VA. As Dr. Green has described, we have submitted proposals to the Department of De-

fense and proposals to the NIH which are reviewed competitively and have funded VA research. But specifically in answer to your question, there is not a specific earmarking of funds to support VA research.

Mr. MONTGOMERY. I appreciate Dr. Rowland yielding.

It seems that we ought to be concerned, Dr. Rowland. You know, a billion dollars—

Dr. ROWLAND of Georgia. Absolutely.

Mr. MONTGOMERY [Continuing]. Is being given on AIDS research, and the VA is not included at this time. I'm sure we'll get some of the money, but if we don't speak up, we might not.

Dr. ROWLAND of Georgia. Mr. Chairman, I am more convinced than ever, since going to California and seeing what is taking place between the schools out there, as I mentioned earlier, and the Veterans' Administration, we must vigorously pursue additional funds for research in the Veterans' Administration. I am firmly convinced of that now. I don't know exactly how we go about that, either, but I want to do everything that I can to help in that.

Mr. MONTGOMERY. I have written Mr. Natcher a letter saying, if it comes back in conference, in some way—and I don't have a commitment from him—but he will consider some way, that in conference part of the money could be guided toward the Veterans' Administration.

Dr. ROWLAND of Georgia. Mr. Chairman, if I may ask another question in that same vein about money, there is money that comes to the Veterans' Administration from various sources, from foundations, money that is bequeathed.

Could I get you to explain how that money is dealt with when it comes to the Veterans' Administration, money that is outside of the Government, how it is distributed?

Dr. GRONVALL. Let me make a kind of quick general response to that, and then I will ask Dr. Green to amplify.

Each year about $100 million comes into the VA from sources other than the VA appropriation. I am extremely proud of that because it largely reflects the quality of the research staff in the VA, because that money represents grants from other Federal agencies, gifts from foundations, grants to support specific research.

At each of our medical centers we have an account called the General Post Fund. Those funds, when they come directly to the VA, are deposited in the General Post Fund. All of the work that is going to go on supported by those funds is reviewed by the research and development committee at the individual VA medical center, again to ensure that the work is of good quality, and then a decision is made to allocate the funds to support a particular research project that has been reviewed and approved. But you are quite right in pointing to that source as an important additional source that expands and supports VA research.

Dr. Green, do you want to add any comments to that?

Dr. GREEN. Just the fact that this has been a rapidly growing amount of money, support from outside the VA to VA investigators. I think it is a specific tribute to the fact that the VA research strength is acknowledged by other Federal agencies, the NIH, which this year is spending maybe $60 million in the VA research

program. And private industry and other Federal agencies have these donations.

Now, most of that money, the great bulk, over 90 percent, is funded through the affiliated universities and medical schools of the VA for use at the VA hospital. Dr. Owen has an NIH grant. That money would normally go to the University of California and they would hire personnel, technicians, to work for him, and buy equipment and supplies that would be used at the VA hospital.

This has some benefits to the VA in terms of getting the administrative support of the medical schools in administering part of its research activities. Only 10 percent or less of these funds are administered directly through the VA itself. Dr. Levine is here, who is at the Washington VA Hospital, and they have developed still another mechanism which is a private foundation, a nonprofit corporation, that administers some of their research funds.

Dr. ROWLAND of Georgia. Let me ask you something in that respect about the administering of these funds.

Did I understand you to say the VA administers that? Does the VA administer those funds, or are they administered in some other manner?

Dr. GREEN. Most of the funds, over 90 percent of the funds from outside VA sources, are administered by the medical schools, the affiliated universities and medical schools.

Dr. ROWLAND of Georgia. Can you give me an idea about the cost of doing that?

Dr. GREEN. There is an overhead cost on all grants and contracts to every medical school that I know about. That runs usually on the order of 40 percent, or sometimes more, of the cost of the contract or the grant.

Dr. ROWLAND of Georgia. Doesn't that seem like a large amount to you?

Dr. GREEN. To me it's a large amount, yes.

Dr. ROWLAND of Georgia. And that's taking away from the actual research just to administer those funds.

Dr. GREEN. Well, I think we should be clear as to who pays that cost. Of course, the NIH—and they're the largest contributor to the VA's non-VA-appropriated funds—the NIH pays overhead on an audited basis to all universities that it deals with. So they audit that rate and they have to be assured that they are paying this overhead rate in support of the administration of research.

Now, it seems like an enormous amount to me, but they are comfortable, I gather, in my discussions with them, that they are paying for services that are required. If we were to lower the rate for administration of a VA researcher who has a grant from the NIH, the additional money that would be saved would be saved by the NIH, and we would like them to save all the money possible. But it wouldn't necessarily add funding to the VA's research program. It is not a direct trade off, in other words.

Dr. GRONVALL. I would like to just add a sentence to that.

The subject of the validity of indirect costs on research is, I suppose, one of the longest running debates in the country. The General Accounting Office and the Office of Management and Budget have developed elaborate policy and procedure documents describing indirect cost reimbursement, and all of the rates, as Dr. Green

said, are audited by the General Accounting Office. So while it is a lot of money, it is all accurately accounted for in detail by GAO audits of each university engaged in Federal support for research.

Dr. ROWLAND of Georgia. Mr. Chairman, my time has expired.

Mr. MONTGOMERY. Let me get to Mr. Kennedy, and then I have a question, and then I will come back to you again.

Joe Kennedy.

Mr. KENNEDY. Just to follow up on Dr. Rowland's notion, it does seem to me that in an awful lot of these universities around the country the Government is charged a great deal of money, not just with regard to VA programs, but a great deal of money to get the full faith and credit of whatever particular university happens to be willing to take on the program, to get their cooperation. As I think the Chairman indicated, and as Dr. Rowland indicated, it is a high price to pay for simply getting the use of somebody's name.

Secondly, I heard somebody mention this morning the White House working group on health policy, an interagency group that has been developed to try and deal with some billion dollars worth of expenditures that are going to be made on AIDS and AIDS research. I heard somebody else mention the fact that there was a $40 million grant that was provided. I know the VA has done tremendous work with regard to prosthetics, with AIDS research and the like.

I just wonder whether or not there is an overall individual in the VA that actively goes after grant funding, so that we're not at the committee level left behind the ball, so that the Chairman isn't fully prepared to go down and argue for the VA when these grant programs are coming up, whether it's the war on cancer or anything else. If the VA has a top of the line research organization, it seems to me that we can do a lot of work on our end if we are given some leads by you. But it does seem that the overall basis of this has to lie in your lap in terms of letting us know what you would like us to be able to go after.

Dr. GRONVALL. I believe that we have done a very good job in being alert to the availability of funds outside the VA that could be used to support our research activities. One of the principal jobs that Dr. Green and his staff has is to stay alert to such opportunities. He regularly comes to me and tells me that he has discovered a pot of money somewhere that we might be able to get our hands into. So we actively pursue every source of funding that we're aware of.

Mr. KENNEDY. Let me address a question to Dr. Green.

Do you, in fact, feel that you have the necessary structure within your organization to really be aware of all the grant funds that are available that you could go after?

Dr. GREEN. Well, I think the major sources of grant funds are known not only to me but to virtually anybody who is in research administration and to the investigators. The investigators know that the big dollars in the United States are at the NIH, and our people are very successfully competing for them.

Now, my going to the NIH doesn't get us any money because I don't write the proposals. We have to have the quality research that is submitted. Now, there are special cases, like this DOD money that I mentioned, and that occurred by surprise and we

were plugged in and were able to get our investigators to compete successfully for that. So I think that we are generally aware of all of the major sources of funds and private funds as well.

My staff people, for example, have contacted the special AIDS research private foundation that Elizabeth Taylor is involved in to get access to those funds. So I think we are generally aware of this.

Mr. KENNEDY. Okay. I guess when I just hear about the $40 million, and the fact that we haven't been more aggressive with regard to the billion dollars—I think it actually might be somewhat less than that in terms of the actual research portions—as far as what we could do and what in the end the VA could do.

I light of that, I also just wondered why, Dr. Levine, you had set up a private, nonprofit organization to carry out your research. I just wondered what were the purposes of that and why you went to the trouble of setting that up.

Dr. LEVINE. An increasing amount of money is coming to the VA from private industry in support of general activities. Of course, within the Government there are fiscal and staffing limitations so that the VA doctors can't pursue all the research efforts that they can think of.

We have had this money, and there have been problems in the administration. The traditional way, or the initial thought, was that the money should go to these post funds. Nobody likes the post funds. The IG didn't like the post funds, and all the fiscal officers are uncomfortable with it.

Mr. KENNEDY. What is a post fund?

Dr. LEVINE. A post fund is an account established at the individual medical centers from donations, donations from service organizations, from veterans who are happy with the health care, charitable organizations, for various purposes. It may be a coffee fund. It may provide items to veterans while they're in the hospital, entertainment and various things. These activities are certainly not set up to support research.

Our nonprofit corporation has several thousand transactions a year. The regulations require that each expenditure be approved by our R&D committee. The budget for each donation has to be approved in advance. The post funds really are not a very efficient mechanism to handle all of this increasing amount of money.

Going to universities, which as you have heard is the most common route, has its own disadvantages. The indirect cost from these other sources such as post NIH are not provided for. They come out of the grant donation and 30 or 40 percent is what we are forced to pay in Washington. This money in these instances goes mostly to the benefit of universities. Any equipment they bought or that they own, the overhead, goes to pay their accountants and deans, et cetera, and the VA loses a third or so of every donation that is made.

Particularly the university is not very attuned to the rules, much less the subtitles, of conflict-of-interest regulations, which have so bedeviled this major area of VA research in the last few years. VA doctors would like to have guidance, but in universities it's just not an issue.

So, because of these two mechanisms—and both have their problems—4 years ago we started a corporation. I am told there may be as many as 20 such corporations—

Mr. KENNEDY. It is a 501(c)(3)?

Dr. LEVINE. Yes, nonprofit. We are registered in the District of Columbia. That's where the medical center is.

Mr. KENNEDY. But is it a D.C.—

Dr. LEVINE. It's a D.C. corporation.

Mr. KENNEDY. So it is not a 501(c)(3).

Dr. LEVINE. I'm unfamiliar with the legalities, but we were incorporated—

Mr. KENNEDY. Well, one happens to be a nonprofit that has been blessed by the Federal Government. The other would be a nonprofit that is blessed by the D.C. city government. State governments and city governments are generally a lot more lenient in terms of what the purposes of an organization are.

I know I have gone over my time, but the only concern I would have is not that you're trying to save money, but that this would be an organization that would be outside of the basic jurisdiction of just about anybody. I don't have any problem with the stated purposes of the organization, but I do think that more and more dollars that do flow to that nonprofit, you would have to look at whether or not people are being reimbursed over and above their existing salary levels by the VA and all the rest of it. I mean, there is a thousand issues that we're not going to have time to get into right now. But setting up a separate entity raises a lot of questions. I have worked for the Federal Government, so I know why you did it. But, nevertheless, I think we have to be very careful in making certain this doesn't turn into some sort of rogue organization as well.

Dr. LEVINE. We have been audited by the VA Inspector General, who had no complaints at all about our mechanism or handling of money. We feel this mechanism, when done by VA people, can be run for the benefit of the VA and money is not diverted to—

Mr. KENNEDY. Well, just one question.

Dr. LEVINE. And accountability.

Mr. KENNEDY. Has a single VA employee gotten an additional dollar's worth of pay out of the nonprofit corporation over and above what they would have been paid had they worked for the VA itself?

Dr. LEVINE. There are some Federal employees who work after hours, but nobody has been paid any profit, any percentage. The officers have not taken any money. It is only as employees.

For example, it is very difficult to get an animal technician to come in for 3 hours a week. So by having that person stay late—and we've been very rigorous in checking their time sheets, checking with their normal supervisors—

Mr. KENNEDY. Maybe you could just give us a little report on how that organization actually and how it develops. Would that be possible?

Dr. LEVINE. Right now or in writing?

Mr. KENNEDY. Just at some point.

Dr. LEVINE. Certainly, I would be happy to.

Dr. GRONVALL. Yes, we would be pleased to do that.

Mr. MONTGOMERY. Without objection, Dr. Levine, if you will give us an organizational chart, that will help.

Dr. GRONVALL. The matter has been thoroughly reviewed by the IG, the General Counsel, and many other people, so we could easily submit a short description of that.

(See "Management of Non-Appropriated Research Monies" on p. 65.)

Mr. KENNEDY. Thank you.

Mr. MONTGOMERY. Thank you.

I have only one question, and maybe counsel, Mr. Wilson, over here has a question.

Dr. Gronvall, what is the status of VA research in spinal cord injury treatment?

Dr. GRONVALL. Again, that's a broad question. We have many research projects going on that relate to injury of the spinal cord and regeneration of the central nervous system. We have a very active center on the West Coast that serves as a kind of clearinghouse for all research going on on regeneration of the central nervous system and the spinal cord.

Dr. Green, could you perhaps add a few more comments about some of the specific research?

Dr. GREEN. I would be pleased to elaborate briefly.

We have a very robust program in the area of spinal cord regeneration, spinal cord injury research, that goes from very basic science that looks at the molecular events that occur when the spinal cord is damaged, through clinical studies of how to improve the care for spinal cord injured patients, through rehabilitation studies, which Dr. Giannini may want to mention, for patients who have spinal cord injury and need rehabilitation.

The basic studies include what I think is the most exciting area in neurobiology at the moment, which is whether or not the transplantation of fetal nerve cells into the spinal cord may eventually provide a therapeutic means of overcoming spinal cord injury. That I think is one of the most exciting areas on neurobiology. We have about six or seven VA laboratories working at the cutting edge of that area. We have other laboratories looking at various drugs, pharmacological agents, that might be useful in protecting spinal cord injured patients acutely from the progression of the trauma down the cord.

In addition, there are lots of important studies that are looking at the prevention of disease that occurs in other systems, such as renal disease. Spinal cord injured patients frequently get very serious urinary tract infections and stones. There are lots of other supportive medical studies that are going on in such patients.

I think that that leads to the next level, which is the rehabilitation level, and perhaps Dr. Giannini would like to—

Mr. MONTGOMERY. Yes, we would like to hear from Dr. Giannini.

What you're saying would certainly be a tremendous breakthrough, if we could help spinal cord injured victims.

Dr. GIANNINI. Of course, you have heard what our mission is. Broadly, it's a very simple mission. But, in fact, it is a very complicated mission: to improve the quality of life of the disabled or infirmed or handicapped veteran, which is, of course, after the fact.

That has implied that one must be somewhat thoughtful on how do we approach that mission.

It is my own particular philosophy, with my experience before I came to the VA, that it is important to address how does a disabled individual live, whatever the disability is, a 24 hour day. How does that individual get to do the kinds of things that we do without even thinking about them? I wanted to say that at the outset so that you would know kind of how we think and plan in an operational way.

I would like to comment on a number of areas, but since we were talking about spinal cord injury, I will address that issue first. Obviously, we approach the issues on whether they are paraplegics or quadriplegics, and where are the areas that we can become most involved in. Numbers are important, problems are important. How do we know what the problems are? How do we arrive at the priorities in terms of what we're doing for spinal cord and all the other disabilities. That is done in a very calculated way, which I won't go into now.

But when we arrive at that position, we discover that there are a number of things that need to be done. We have involved ourselves in a number of those, some of which you're already familiar with. We are greatly involved in functional electrical stimulation so that we can offer, at least as an option, for the paralyzed to walk. For the high para and the low quad, not only to walk but to write and to feed himself. All the appropriate kinds of functions that such a spinal cord injured individual requires, we try to address in whatever way we can.

Functional electrical stimulation, as you know, is a process by which we may apply electrodes on the surface of the body, but we are very excited about our other program whereby we implant electrodes directly on the muscle and by computer, that individual is able to do the kinds of things that I stated, including walking up and down stairs and going to the bathroom alone.

These are tremendous independent activities that are so important to such an individual that we're very sensitive to.

We are studying better bowel and bladder technology for receptacles and collectors, which is important. Another pressing problem are decubiti or pressure sores, and better materials for seatings, whether it's in a chair, a wheelchair or a bed, this is a high priority.

There are very simple things that we have to address if we have any disability that we don't think of too often. Very often it's just pain or perspiration, or temperatures and that sort of thing.

In addition to that area for spinal cord injury, we are using robotics for the quadriplegic, so that if the individual chooses to feed and prepare a meal by him or herself, that can be done. I think we have shown this up on the Hill several times and some of you have seen it, that the robot can actually take the food out of the freezer and put it in the microwave, cook it, put it in front of the quadriplegic and feed him, give him a drink, brush his teeth, comb his hair, wash his face, a number of things that I think are very private activities that one would like to do one self.

In addition, we have environmental controls for such individuals, either by speech or light or looking, to implement the environmen-

tal controls. A quadriplegic can say to his house, if it's a smart house, "Lights go on" or "Lock all the doors, I'm going to bed." Or "thermostat go up, I'm cold" or "oven go on" and so on. I think you know what environmental controls are.

So in the area of spinal cord injury—there are many other things I can talk about that I would like to touch on, if I may.

Mr. MONTGOMERY. We have other witnesses, but you go ahead. The Chair will give you some more time. But for our witnesses and those who are waiting, we'll be through in just a few minutes. So you may proceed.

Dr. GIANNINI. I'll go quickly.

In this regard, at FES we are in the process of perhaps going for national competition for a functional electrical stimulation center, and we, too, are trying to involve private industry, particularly in Ohio, because that is where our density of experts are at the moment. Hopefully we will have some good news on that.

Aging is very important in terms of how we approach our research because, as has been stated many times, our veteran population soon will be preponderantly over the age of 65. We all know that after the age of 65 we're all going to have some kind of a disability, whether it be just glasses or something more involved. So, transcending through all of those disabilities, we emphasize aging as well.

As a matter of fact, Dr. Rowland, you would be pleased to know that one of our centers that is completely committed to rehabilitation research is in Georgia, at our Decatur VA hospital, and we we have a very strong affiliation with Georgia Tech, because we must rely not only on the general affiliations, but we must make strong affiliations with the various schools of engineering because we need that kind of expertise.

We have similar centers at Palo Alto—

Dr. ROWLAND of Georgia. I would like to interrupt right there, if you would yield for just a moment. You have beaten me to the word Palo Alto, because they have a complex there between the engineering school and the VA center that I think is just outstanding. So much is going on in medicine now that requires the knowledge of engineers and they have just started with that. I think that is one of the most outstanding things that I've had an opportunity to witness.

Dr. GIANNINI. Thank you. Actually, it's a few years old. It's about 5 or 6 years old. But we do have a cluster of outstanding researchers there because of Stanford and because of our VA clinicians that are so research oriented. And a third one is at Hines, with similar kinds of goals.

I would just like to tell you some of the things that we are currently looking at that are very exciting. I will just do it by bullets so that I can go quickly.

Shortly we will be involved in a very nationalized program of CAD/CAM, which is Computer Aided Design/Computer Aided Machine, which will be able to, with high technology, mill out a socket for an amputee within 20 minutes and deal with all those problems.

We are looking into the feasibility of limb transplants, because we have had, not in the VA, but there has been some very success-

ful animal research of limb transplants. Actually, tomorrow I will be in Seattle to convene the first meeting of that particular feasibility program. It occurred to me that, if we can transplant hearts and lungs and all those things, we ought to give it at least a shot. So that's what we're going to do tomorrow. We have these outstanding researchers.

To complete that 24-hour day, leaving a lot of things out, we are also into recreation and leisure. Amputees need different kinds of legs if they want to swim and if they want to golf, if they want to ski. We have done that. We have the sled for the spinal cord injured. If they want to bowl, they need a different kind of chair, and we have done that.

Thank you very much.

Mr. MONTGOMERY. Thank you, Doctor. That was very helpful. If you have other matters you want to add to the record, we will certainly keep the record open. We also have additional questions, Dr. Gronvall. But we have to move on to the other witnesses, in fairness to them. I want to thank you for being here this morning. It was very, very helpful, and this committee is vitally interested in medical research, as you can see here.

(See "Rehabilitation Research and Development Plans and Activities" on p. 69.)

Mr. MONTGOMERY. I might have left the impression that the total billion dollars is going into research on AIDS. It was in the Appropriations Act. I believe, Dr. Rowland—and you can correct me—that part of that will go to education, treatment and research. So the treatment and research, the VA is certainly involved in that.

If there are no other comments from the members of the committee—

Dr. GRONVALL. Mr. Chairman, if I could just close on two very short notes.

In your opening comments you referred to the veterans service organizations. Three of those organizations are here to testify. But I want to add my own very great thanks to the veterans service organizations because I think their national leaders here in Washington have a very sophisticated understanding of the long-term benefits of the VA's research program. They very strongly support our research activities and they recognize that over the years this is the way to come up with new forms of treatment or prevention that can prevent the problems that currently plague veterans. So they have been very helpful and very understanding, and I am happy to recognize that.

Finally, I would like to close on a personal note. Again, there has been a very strong theme in this hearing about the benefits that our research program brings not only to our own veteran patients but to all Americans. I myself have had a dramatic example of that which I think will be of interest to you. My own sister, Joyce Anderson, unfortunately, a year ago was discovered to have a cancer of the kidney. She lives in the Minneapolis area. She had surgery in one of the very excellent hospitals there, not in the VA.

But as a follow up, because she had recurrence of the tumor, a dramatic new form of therapy developed at the Minneapolis VA hospital by the physicians and scientific staff there was utilized. There is evidence that several of her recurrent tumors regressed

following that treatment. She has just recently had additional surgery done at the University Hospital in Minneapolis, and again, her tumor has been studied by the research scientists at the VA.

In this case in my own family, I believe I can directly see the benefits to all Americans that come out of very active research programs in the VA, and the kind of collaboration that our VA researchers have with other physicians in the communities in which they are taking care of veteran patients. So I extend my own personal thanks for the support that you and this committee have given to our VA program, and to Mr. Penny for the support he gives to our Minneapolis VA. This has been a dramatic experience for me, so that I not only give speeches about the benefits of VA research, but have been able to actually experience that in my own family during this past year.

Thank you, Mr. Chairman. It's a great pleasure for us to be here.

Mr. MONTGOMERY. Thank you, Dr. Gronvall, and thank you for giving us that personal experience. I believe across the land we're helping many Americans. That's what it is all about.

Dr. GRONVALL. Thank you.

Mr. MONTGOMERY. I wonder, Dr. Gronvall, if you could have some members of your staff stay and hear the rest of the witnesses.

Dr. GRONVALL. Yes, Mr. Chairman. I will be staying myself, along with other members of my staff.

Mr. MONTGOMERY. Very good. Let the record reflect that.

Our next witness is Dr. Kenneth Davis of the American Psychiatric Institute and Chair of Psychiatry, Mt. Sinai School of Medicine, and also is a staff physician at the VA Medical Center in the Bronx. Dr. Davis.

STATEMENT OF KENNETH L. DAVIS, M.D., CHAIRMAN AND PROFESSOR OF PSYCHIATRY, MOUNT SINAI SCHOOL OF MEDICINE, AND STAFF PHYSICIAN, BRONX VA MEDICAL CENTER, NY

Dr. DAVIS. Thank you, Mr. Chairman. I have prepared a lengthy statement that I would like entered into the record.

Mr. MONTGOMERY. Without objection, so ordered. Your full statement will be put in the record.

Dr. DAVIS. Thank you. I will just summarize what I have written.

I am Chairman and Professor of Psychiatry at the Mount Sinai School of Medicine, a position that I have only held since July 1. Prior to that, I was the Chief of Psychiatry at the Bronx VA since 1979. I also direct one of the VA's two schizophrenia biological research centers and one of the first federally-funded Alzheimer's Disease research centers. In addition, I have been a VA staff physician or associated with the VA continuously since 1974.

The essential point of my statement this morning, Mr. Chairman, can be summarized in the conclusion of the Institute of Medicine's report on "Research and Mental Illness and Addictive Disorders." That report appeared in 1984 and it stated: "Research (in mental health) is not funded at a level commensurate with the economic costs it imposes on a society, or at a level comparable to research funding for other major disorders."

This circumstance is true for the Nation at large and is particularly true in the Veterans' Administration. Yet, knowledge of brain

chemistry, brain physiology, has grown exponentially in the last decade, and it has made possible the conceptualization of real breakthroughs in neuro-psychiatric disease.

Perhaps no better area typifies the advances that have been made by applying neurobiology to neurosciences than what we have seen in Alzheimer's disease. Prior to 1978, Alzheimer's disease was a mysterious condition in which we thought brain cells were dying rather randomly, many cells dying, but we knew, beginning in 1978, that this disease was a rather specific disease in which only certain kinds of brain cells were dying—cells that seemed to make acetylcholine.

Acetylcholine is a chemical that helps cells in the brain talk to each other. It is a particularly interesting chemical because it is involved in learning and memory. Finding that this chemical was deficient in the brain of the patients with Alzheimer's disease had obvious implications for understanding and conceptualizing the condition.

We now know that Alzheimer's disease is more complicated than that. There are a number of other chemicals that are deficient in the brains of patients with Alzheimer's disease, but most are unaffected. This is a disease with an exquisite predilection for certain kinds of parts of the brain and not others.

Now, knowing that, it became possible, beginning in 1979, really for the first time to conceptualize a rational treatment approach to relieving some of the symptoms of Alzheimer's disease, which was to say giving drugs that might increase or normalize this chemical acetylcholine.

Very recently that work has received a great deal of national attention with the initiation of a federally-funded multicenter study to look at a drug called tetrahydroaminoacridine, or THA. This is a study that will be conducted at 17 sites across the country, including four Veterans' Administration medical centers, a study that I coordinate, and will be funded through the Alzheimer's disease centers. It is a study that is a unique, private/public consortium in which the National Institute of Aging is spending $2 million and the Warner Lambert Company approximately $3 million, and the Alzheimer's Disease and Related Disorders Association, $250,000.

Now, it is our hope in that study that we will be able to accomplish three goals: first, determine what proportion of patients with Alzheimer's disease may respond to this drug—and we know from other work that not all patients will respond. My estimate is perhaps a third to a half of the patients will have some improvement. The second goal of the study is to determine how large an improvement. We expect it to be a modest one, but clinically meaningful. And the third is to determine whether the drug can be administered safely.

As all this work has been going on, much more has been learned about Alzheimer's disease, so that we know that ultimately a symptomatic treatment of the disorder will require the reversal of more than simply this one abnormality. A number of us are now conceiving of strategies that will reverse a number of neurotransmitter abnormalities requiring a combination of drug therapy.

Now, in our center, which has had a lot to do with this work, some of the impetus for it came from funding from the Veterans'

Administration to investigators within our hospital who have designed some of the rating scales that are being utilized and some of the very design characteristics as well as the biological underpinnings for the study. In addition, people in our center with funds from the Veterans' Administration, as well as the National Institutes of Health, have been looking at brain transplantation to reverse some of the lesions in various animal models of Alzheimer's disease, as well as to look at certain growth factors, trophic factors, that we think may help cells survive.

In 1978 a diagnosis of Alzheimer's disease was a particularly problematic thing to make. Studies done around that time illustrate that when the clinical diagnosis of Alzheimer's disease was compared with tissue obtained at autopsy, physicians were wrong 50 percent of the time. We have done much better than that recently. Because of work that has been conducted in a number of centers over the last 10 years, it is now possible to diagnose Alzheimer's disease with an accuracy of 90 percent.

But still that's not good enough. A number of investigators have been working on simple laboratory tests, blood tests, that may help us make this diagnosis. Investigators at the Albert Einstein College of Medicine, Peter Davies, and at the Massachusetts General Hospital, Dennis Selko, have identified proteins that are present in the brains of Alzheimer's patients in much larger quantities than would be available and present in normal elderly people. It is hoped that as this work progresses the identification of these compounds in plazma, in blood, may help us facilitate a much more accurate diagnosis.

Now, as impressive as this progress has been in recent years, perhaps the most exciting developments have come in the area of understanding molecular genetics or the heredity of the condition. Work, again partially sponsored by the Veterans' Administration at our center, as well as work that was conducted at Johns Hopkins and as has now been widely replicated around the world, indicates that there is a striking hereditary component to this disease. If an individual has had a first degree relative—that is to say, a mother, father, brother or sister—with Alzheimer's disease, their risk of having that disease is four times higher than someone who does not have a family history like that.

What is perhaps even more disquieting is that if an individual with this family history should be fortunate enough to live to age 90, their chances of suffering Alzheimer's disease approaches 50 percent. That is obviously very frightening to a lay person, but to a scientist it is really rather exciting and offers us new hope. It offers us the possibility of identifying an Alzheimer's gene or genes, and identifying those genes to answer a very critical question, which is why do some people have this gene expressed at age 55 and other people have the gene expressed at age 85. If we can understand that, if we can get the answer to that question, we can perhaps be able to prevent this gene from being expressed and the gene product from having its effect.

That isn't that far off. Particular proteins have now been identified in the Alzheimer's brain that are in much larger quantities than they are in normal brains, and those have already been traced back through genetic material. So it is hopeful that with the

extraordinary advances that have happened in molecular biology, we may be able, for the first time, to begin to think about something that 10 years ago would have seemed extraordinary—that is, the prevention of this disease.

Now, why have we made such really exciting advances in Alzheimer's disease in such a relatively short period of time, just 10 years. Well, in part, it is because we have had a public interest group, the Alzheimer's Disease and Related Disorders Association, that has brought to the attention of the Congress this terrible plague that we suffer. Another reason is that we have had really extraordinary leadership in the Government, from people like Bob and Frank Williams of the National Center on Aging, making the case rather forcefully, and finally we have had a substantial increase in funding that has been both long term and stable. It has provided the infrastructure to really look at these problems.

That's fortunate for the Veterans' Administration. As you know, the average World War II veteran is, I believe, now age 68. They are beginning to enter the period of the greatest risk for dementing disorders. Unless we can do better, we're going to be flooded with these people and really perhaps not have the ability to provide the quality of care we want. So I look forward to the possibility that the money we have invested in research here may be able to really improve our lot in the years to come as this epidemic of elderly people approaches our doors.

Let me turn to another disease that, of course, is a major factor in the Veterans' Administration, and that is chronic psychosis, mostly schizophrenia. As you probably are aware, 20 percent of VA beds are occupied by patients with chronic psychosis, often, most commonly, schizophrenia. Here, too, there is reason for optimism—not as much as we've seen with Alzheimer's disease, but still cause to have some feeling that there is a likelihood that we may be able to do better in the future than we have in the past. There have been real advances in imaging the brain, seeing it, seeing it even function; advances with the application of molecular biology, just as I described in Alzheimer's disease, ultimately to schizophrenia; in neurochemistry and population genetics and neuropsychology.

With our schizophrenia biological research center, totally funded by the VA, we have had the kinds of resources that have been necessary to look at some really high risk, high gain questions. One of the neurotransmitters that has been implicated in schizophrenia, though we know it is not by any means the whole story in schizophrenia, which is one important chemical, is a chemical called dopamine. Dopamine has to act on a site in the brain to work. That site is called a receptor. Our laboratory and a number of others around the country are trying to isolate that receptor, find out what it looks like and what its chemical structure is, and when we do, we think it will be possible to develop far better drugs and better treatments and to understand schizophrenia in a way that we haven't before.

Now, our laboratory will probably not be the first one to identify this receptor. Many more sophisticated laboratories are working on this problem. But I am sure it will be isolated within the next 2 years and new doors will be opened in schizophrenia. Other recep-

tors of equal importance are being characterized in the same way and will also give us new avenues to pursue.

As you know, the population of veterans that we serve in our hospital argues very persuasively for a commitment to the neuropsychiatrically ill. In the first half of 1987 we saw, in the Veterans' Administration, 55,000 inpatients. On the average, our VA census is 55,000. Of those 55,000 beds, approximately 40 percent of them are filled with patients who have a psychiatric diagnosis.

Looked at another way, approximately 20 percent of all our admissions to the Veterans' Administration, in the first half of 1987, were patients who had a psychiatric diagnosis. Approximately 22 percent of all our outpatients seen in the first half of 1987 had a psychiatric diagnosis. Thus, we have 40 percent of the inpatients and approximately 22 percent of the outpatients who are psychiatric patients.

Now, how large a share, then, of the VA's resources are received by this substantial, if not largest, proportion of patients that the Veterans' Administration has to take care of? Well, less than 10 percent—exactly 9.2 percent—of all residency slots are allocated to psychiatry, although we take care of, depending on the figure, between 20 and 40 percent of the population in the Veterans' Administration. Twelve percent of VA grants approximately go for psychiatric research and behavioral sciences. Five percent of the very important career development awards go to psychiatrists and other people in the behavioral sciences.

The reason, I believe, that we obtain only 5 percent of career development awards, or only 12 percent of grants, is not because of any bias on the part of the granting agencies; it is not because the Veterans' Administration doesn't try very hard to fund behavioral research. It is, rather, because of some of the information that appears on page 6 of my testimony, which is the per diem costs that the VA spends on various patient populations in the VA. As you can see, I have compared the per diem costs for medicine, neurology, surgery and psychiatry, and it is apparent that the cost for psychiatry is about one-half of the cost overall that the Veterans' Administration spends for per diem on a patient with another disease that is using medicine or neurology. Well, in part, it is because psychiatric patients are less expensive to take care of, but it is also, in part, because we have these large neuropsychiatric hospitals in the Veterans' Administration to take care of large numbers of patients at a relatively minimal cost.

But what is perhaps more telling for the question of research is the amount of dollars in a per diem cost that is directed toward research. You see a $5 cost for psychiatry, which is half of what a neurologist, a physician in medicine, or a surgeon allocates to his time in medical research. What this actually reflects—these data come from the composite, the compiled 14.4 forms, which is the VA's way of looking at what a physician is doing with their time. What it says, very simply, is that about half as much time is spent by the psychiatrist doing research, or education, as it is for, say, the internist, the surgeon, or the neurologist. That's because psychiatrists have an awful lot more to do in the Veterans' Administration. We have a larger burden of patients to take care of. We simply don't have the time to produce some of the grants that are

necessary to be competitive in the grant arena, or to even write the career development awards that are important if we are going to facilitate the careers of young scientists in psychiatry.

Now, fortunately—

Mr. MONTGOMERY. Dr. Davis, we have a time problem here. The Chair has let you extend your remarks, but we usually try to limit testimony to 10 minutes. Could you summarize the rest of your testimony, please? We do have some questions we would like to ask you for the record.

Dr. DAVIS. Fine. I would very much like to do that.

I think there are a number of things that can be done to facilitate and stimulate VA research in neurosciences. One is an aggressive and vigorous career development award system. Already the Veterans' Administration has moved in this direction in psychiatry to produce such a program. We now have to see from the psychiatrist's point of view that we get more psychiatrists to apply to that program.

Second is to facilitate a growth in the center programs. We have two schizophrenia biological research centers and a handful in alcoholism. Those centers provide the infrastructural support that is necessary to really improve the quality of research that is conducted in these areas.

Third is to increase the residency allocation, and finally, what I think is perhaps the most important, is to understand the implications of the DRG or prospective reimbursement system to psychiatry. This has been a system that particularly distributes resources away from psychiatry and even worsens our relative proportion of dollars that go into psychiatry compared to other areas and makes it more difficult for psychiatrists and others in the behavioral sciences to have the time to engage in education and research activities.

Thank you.

[The prepared statement of Dr. Davis appears on p. 72.]

Mr. MONTGOMERY. Thank you. I have just one question.

Dr. Davis, what is your view on the idea to establish a fourth VA research service for mental health? Dr. Gronvall mentioned the three areas, and one of the three covers mental health.

Dr. DAVIS. I haven't carefully thought it through.

Mr. MONTGOMERY. You haven't what?

Dr. DAVIS. I have not carefully thought it through, and all its implications. The first time I have heard about that possibility is now from you. So I would have to think about that.

Mr. MONTGOMERY. Okay.

Dr. Rowland.

Dr. ROWLAND of Georgia. Thank you, Mr. Chairman.

I want to ask somewhat of a medical question here. You talked about the transmission of impulses across the synapse in Alzhimer's disease and acetylcholine. I was wondering about the transmission of impulses across the synapse in motor neurons, the acetylcholine deficiency in myasthenia gravis. Do you think, if we discovered some way to deal with that in Alzheimer's disease, that that might be helpful to motor neuron diseases?

Dr. DAVIS. Well, in some ways it has happened in the reverse. Some of the drugs that have been effective in myasthenia gravis

are drugs that increase acetylcholine. What we are looking for is the same kind of drugs that do so but do so predominantly in the brain and not in the periphery.

Now, whether the factors that lead to the degeneration of function in myasthenia gravis have anything in common with Alzheimer's disease, in my estimation, seems unlikely. There are antibodies, as you know, in myasthenic situations that result in the neurotransmitter not adequately transmitting its impulse across the synapse. Those antibodies don't seem to exist in Alzheimer's disease; rather, there are other problems in Alzheimer's disease.

Dr. ROWLAND of Georgia. It's an intriguing thought, though, that acetylcholine might be the same—or is it different? I don't want to get off on that—

Dr. DAVIS. Some of the receptors are the same and some are different.

Dr. ROWLAND of Georgia. You stated that there had been a marked improvement in patient care at the Bronx in the psychiatric area, and you attributed that largely to research. I certainly subscribe to that, and not only neuropsychiatric diseases, but in any kind of diseases I believe there is a significant improvement in the quality of patient care directly related to research activities.

But could you give us an idea about how your research effort started?

Dr. DAVIS. Well, we were recruited from the Palo Alto VA and Stanford. We grew up very much in that model. We were recruited to the Bronx VA and the Mount Sinai School of Medicine to do what had been done there to improve the quality of care in the inpatient service and the outpatient service in psychiatry. The mechanism that we knew to use was to turn it into an academic service. We made clinical investigation the highest priority.

When we came to our service, we had the lowest JCAH approval. The patient satisfaction surveys showed that no one was particularly satisfied with what we were doing. The SERP reviews were very negative. We couldn't fill our residency positions, nor could we even fill the physician lines. The medical school would not really integrate our psychiatry program because they didn't think it was of high enough quality. But because we were able to start a program in clinical investigation that received funding rather rapidly, both from the VA and from the NIH and NIMH, we were able to attract some very high-quality physicians to our service, which then led to an ability to recruit broadly nationwide. Today, in fact, we have been so successful that ten of the graduates of our program are now out in other centers around the country performing clinical investigations. Simply put, without clinical investigation, we could not have turned the psychiatry service of the Bronx around.

Dr. ROWLAND of Georgia. You are the Chair of psychiatry at the Mount Sinai School of Medicine, and staff physician at the VA medical center. Do you find that is a good relationship?

Dr. DAVIS. Well, in our department it's essential, because the academic side of our department really is at the Bronx VA. There are things that we can do there that we simply can't do at the Mount Sinai hospital. The largest component of research dollars, Federal and otherwise, flows to the VA, not to Mount Sinai hospi-

tal or to Elmhurt, the city hospital, or Beth Israel, a private hospital. That I am a "5-eighths time physician" reflects, in fact, that more than 5-eighths of my activities are connected really to what we're doing at the Veterans' Administration.

We're in a situation now where there is a reverse flow of dollars. Dollars flow from our hospital and medical school to the VA to supplement the salaries of key physicians that I need to keep, and to fund many individuals who are full-time Mount Sinai employees who stay full time at the VA.

Dr. ROWLAND of Georgia. Mr. Chairman, I want to make that point every time I have an opportunity to. Again, this is another example of the excellent relationship that exists between medical colleges, universities, and the Veterans' Administration. I just don't think we can make that point often enough.

I see my time hasn't quite run out, so I have one more quick question that I want to ask. The relationship between researchers in the VA in the mental health behavioral sciences in the Central Office to the field, so to speak, could you comment on that? Is my question clear?

Dr. DAVIS. Perhaps you might elaborate a little more specifically.

Dr. ROWLAND of Georgia. I am particularly interested in research activities as a part of community treatment, homeless initiatives and things like that, as it relates to the Central Office.

Dr. DAVIS. Yes, there has been an initiative from psychiatry and Dr. Herrera to reach out into the community and to have what we call some home-based health care in psychiatry, which I think will be exceedingly important, given that the community we live in in the Bronx, there is almost a total breakdown in the community of the kind of support that is necessary when a patient is discharged.

We are a hospital-based system in the VA and, as you know, as a hospital-based system, we really can't go out into the community and keep our people well. The community can't support it. However, with this new initiative, we have been better able to actually go out with nurses, social workers and psychologists, find the patients, and help them survive in the community.

Dr. ROWLAND of Georgia. Thank you, Mr. Chairman.

Thank you very much, Dr. Davis.

Mr. MONTGOMERY. Thank you.

Mr. Stump.

Mr. STUMP. I have no questions, Mr. Chairman.

Mr. MONTGOMERY. John Rowland.

Mr. ROWLAND of Connecticut. No questions, Mr. Chairman.

Mr. MONTGOMERY. Dr. Davis, thank you very much. You have been very helpful. We appreciate your patience and the time you have given us today. Keep up the good work.

Dr. DAVIS. Thank you.

Mr. MONTGOMERY. I would like to call our last three witnesses to come to the witness table together: Mr. David Gorman, Assistant National Legislative Director of the DAV; Mr. Dennis Cullinan, who is with the VFW; and Frank DeGeorge of the Paralyzed Veterans of America. Without objection, your full statements will be put in the record.

Mr. DeGeorge, let's start with you.

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STATEMENTS OF FRANK R. DE GEORGE, ASSOCIATE LEGISLATIVE DIRECTOR, PARALYZED VETERANS OF AMERICA; DAVID W. GORMAN, ASSISTANT NATIONAL LEGISLATIVE DIRECTOR, DISABLED AMERICAN VETERANS; AND DENNIS M. CULLINAN, ASSISTANT DIRECTOR, NATIONAL LEGISLATIVE SERVICE, VETERANS OF FOREIGN WARS OF THE UNITED STATES

STATEMENT OF FRANK R. DE GEORGE

Mr. DEGEORGE. Thank you, Mr. Chairman.

Since the inception of the Paralyzed Veterans of America, our main thrust and main purpose has been the receipt of good medical care, providing good service work, and pursuing research in all areas that would improve and benefit the spinal cord injured veteran and nonveteran in this country. Today, this hearing provides a vehicle whereby testimony that PVA has provided in the past is reinforced one more time, leading to the three points I made about the thrust and purpose of our organization, which, incidentally, was reinforced by the congressional charter of this Congress in 1971.

I don't think I need to tell you this, but I think it important to say it, that I know of no person that sits in this wheelchair that likes it. The thrust of what that means, I could go on at great length in explanation. Although you have encountered many of my associates and have realized our personal good nature on many occasions, I reinforce the point that we hate this wheelchair. That vision, that purpose and that point, must not be lost through the good nature and the rehabilitation and the way we pursue our lives, that it must not be lost that we still hate this wheelchair.

This leads me to say that research is important in every aspect—biomedical, rehabilitation, prosthetics and orthotics research, and one that I might add that you will hear throughout my testimony on behalf of PVA is the aging research that needs to be looked at as far as spinal cord injured veterans are concerned.

I might also, prior to completion of this testimony on behalf of PVA, ask at this point a waiver of your 5-minute rule so that we could convey our thoughts and our presentation that is so important to our organization. I will try to live within the 5-minute rule, but I believe I am going to go over. I would request a waiver of your 5-minute rule, sir.

Mr. MONTGOMERY. No problem.

Mr. DEGEORGE. Thank you.

I want to first say that, while we can be praiseworthy, we also can be critical. In being critical, we hope we're constructive in the process.

Section 41.01(c) of title 38, U.S. Code, in mandating the VA to conduct its overall research mission, specifically elevates research into spinal cord injury and disabilities that lead to paralysis as the stated priority in the agency's medical investigatory effort. This section states:

> In order to carry out more effectively the primary function of the Department of Medicine and Surgery, and in order to contribute to the Nation's knowledge about disease and disability, the Administrator shall, in connection with the provisions of medical care and treatment to veterans, carry out a program of medical research (including biomedical, prosthetic and health care services research, and stressing re-

search into spinal cord injuries and diseases and other disabilities that lead to paralysis of the lower extremities).

Mr. Chairman and members of the committee, immediately I must allude to the fact that this priority is not lived up to and the fact that there's a $200 million research budget allocated to the Veterans' Administration and only $6 million, approximately, is provided for total spinal cord injury research in all areas. PVA, since 1976, in the founding of its own foundation for research, has in that short period of time provided $4.2 million for spinal cord injury research.

Mr. MONTGOMERY. Let me ask you a question here, Frank.

Mr. DEGEORGE. Yes, sir.

Mr. MONTGOMERY. PVA quite often has given grants to hospitals, and I assume some schools, for research on spinal cord injury. Do you give any money to the Veterans' Administration like other groups do, which was mentioned earlier here this morning?

Mr. DEGEORGE. In all fairness to the Veterans' Administration, we have worked with them on various health research projects, especially on a mortality study on spinal cord injury, and various other projects. I believe there are some contributions made to the Veterans' Administration by the PVA.

In the area of working with the Rehabilitation and Engineering Society of North America and the VA, PVA has contributed moneys to support the effort to provide wheelchair standards. I know for certain that money was provided by PVA in that area. As far as all-encompassing, at this point I don't think I would like to take the time. I don't think you would want to hear how much involvement we are engaged in in providing moneys to the VA in what is, I might say, a cooperative effort. But yes is the answer to your question, sir.

Mr. MONTGOMERY. Just to carry this a little further, could you actually provide for the record how much money is provided? I guess I'm talking about larger bucks, maybe in wheelchair research. I've seen where you have given sizeable amounts. You know, we're trying to find out. Maybe the VA won't put the money where you want it. If there is a problem area there, and we're all in this together, then it would be helpful if this committee could work out some of these problems.

Mr. DEGEORGE. First of all, I am certain that PVA can provide a list of projects and the amount of funding that is included with the cooperative effort with the Veterans' Administration. In fact, we can provide you a total list of all our funding projects. We would be most proud and happy to do so.

(See p. 110.)

Mr. DEGEORGE. As far as when we put money into any project, you had better believe that PVA makes sure it gets to where it's supposed to. I'm sure you're aware of that, sir.

May I continue, sir?

Mr. MONTGOMERY. Yes.

Mr. DEGEORGE. With the previous priority established as stated, the Veterans' Administration has one of the best opportunities in the Federal Government to be the national leader in the field of spinal cord injury and dysfunction. It is this research that holds for all spinal cord injured persons the greatest promise for improved

physical well-being through advances in rehabilitation research and ultimately an end to paralysis itself through biomedical research. The research efforts of the VA, the Federal agencies, and the private sector—including PVA's own significant research activities—have all made marked advances in neurological research during recent years. However, as I pointed out, more can and should be done.

The quality of any research program can be assessed in terms of the availability and consistency of funding which determines the extent of the research conducted, and the direction provided by those who administer the research program in managing those funds and establishing research priorities.

As mentioned, PVA does work closely with the Veterans' Administration's research efforts to help coordinate and sponsor cooperative activities in spinal cord injury. For this reason, we remain concerned that the VA maintain adequate funding and dynamic leadership for its research activities.

As appropriations in the past for VA medical and prosthetic research has steadily declined from 1984 to 1986, we would also like to take this opportunity to thank this committee and the Appropriations Committee for having restored the VA's budget to approximately $200 million. This is also true for fiscal year 1987 and fiscal year 1988.

Briefly, in other areas, reaching the ranks of the elderly is a mixed blessing if a significant quality of life cannot be maintained. It is our understanding that the VA is presently considering an in-house proposal to expand the Geriatric Research Education and Clinical Centers research study program to include the needs of aging spinal cord injured veterans. PVA fully supports this proposal and would be happy to work with this committee and the VA to ensure that this comes about.

Regarding prosthetic and orthotic research and development, the Veterans' Administration has made great strides in the advancement of prosthetic research. For example, the so-called "Seattle Foot", which has been demonstrated before this subcommittee, combines modern engineering and space age plastics to greatly improve mobility and function to amputee veterans. Keeping this in mind, the development of so-called "low tech" items can be as important in restoring functional abilities for spinal cord injured individuals and amputees as "high tech" items and procedures, which cost millions to research and develop.

Nowhere is this differentiation clearer than in the area of orthotic research. Advances in technology present an equal opportunity for the VA to keep pace with the development of new designs for body and leg braces, ambulatory assistive devices and other functional daily living devices for those who have limtied range of motion. The opportunity exists, if properly emphasized, to transform a field that once relied on the makeshift or, in the cases of braces, mere blacksmith technology, into one that can keep pace with the ongoing development of new technologies in metallurgy, plastics and design.

PVA requests that the subcommittee review the division of emphasis and extent of priority between prosthetic and orthotic research by funding allocation and projects in order to ensure that a

proportionate emphasis is being placed by the VA in both of these activities.

Having discussed funding levels, while I have much to say on behalf of PVA in this area, I will ask you to refer to our written testimony. In the meantime, I do have to comment further—and I'm coming to the end of my presentation, and thank you for your indulgence. I need to point out that the Office of the Deputy Assistant Chief Medical Director for Prosthetic Services, Research and Development is directly responsible to the Assistant Chief Medical Director for Clinical Affairs. PVA is aware that this position is currently vacant. We urge the VA to find and appoint a qualified individual to assume this position to once again bring dynamic leadership for these programs as called for in the 1984 reorganization plan.

We are also aware that a task force convened by the Assistant Chief Medical Director for Clinical Affairs has recently submitted its final report reviewing the Prosthetic Services, Research and Development reorganization. We strongly encourage the VA to fully review and consider these recommendations for adoption.

Leadership and quality of management for any program in the VA can be as important to that program as the level of funding it receives. PVA pledges its full assistance to see that this goal is fully accomplished.

On that note, Mr. Chairman, while I can talk about cooperation, collaboration and communication and the cost of programs, it still remains that we need a good spinal cord injury research project in all areas. At the same time, we do compliment the VA for many of its projects. I think you have heard today that we are also concerned about sufficient funding levels provided to them and to spinal cord injury research. We would thank the Congress at this time, and this committee especially, for all they have done in the past. Again, we ask that you look at doing more.

Thank you, Mr. Chairman.

[The prepared statement of Mr. DeGeorge appears on p. 82.]

Mr. MONTGOMERY. Thank you, Frank. Let me ask one question before going on to Mr. Gorman.

How much money has PVA put out on research to schools this year?

Mr. DEGEORGE. I don't have the total figure, sir, but I know that at the PVA convention $1.5 million was allocated for a Yale project in New Haven, CN for a research study, cooperative efforts with Yale University. But I don't have the total figure, sir, at my disposal right at this moment.

Mr. MONTGOMERY. For the record, how about the total amount that PVA has put out and designated for 1985, 1986 and 1987?

Mr. DEGEORGE. We would be happy to, sir.

Mr. MONTGOMERY. Fine. That will help us.

[The information appears on p. 89.]

Mr. MONTGOMERY. Mr. Gorman.

STATEMENT OF DAVID W. GORMAN

Mr. GORMAN. Thank you very much, Mr. Chairman.

On behalf of the membership of the Disabled American Veterans, and certainly including the thousands of members whose disabilities dictate the need to utilize the various prosthetic appliances and devices of the VA's research programs, I welcome this opportunity to relate our views regarding the VA's research programs.

Mr. Chairman, we have heard talk this morning from the VA about the various elements that comprise their overall research program. For the purpose of my summarization, I would like to focus, if I may, on the Rehabilitation Research and Development Service.

The mission of the Rehabilitation Research and Development Service is to improve the quality of life and functional independence of physically disabled and handicapped veterans. This mission has become significantly advanced as a result of ongoing research projects in established priority areas of prosthetics, amputations, orthotics, spinal cord injury, and various types of sensory aids.

While basic medical research is somewhat generic to the entire medical community, whether it be in the private sector or the Federal Government, it is our strong belief that if it were not for the Federal Government, specifically the Veterans' Administration, rehabilitation research would be virtually nonexistent in this country.

Rehabilitation research more often produces beneficial results in a comparatively short span of time. This often results in disabled veterans, as well as transferring over to the general population, being able to utilize these research findings and applications in order to lead a fuller, more meaningful and productive lifestyle.

It is our opinion, Mr. Chairman, that the Rehabilitation Research and Development Service is doing an admirable job in meeting their stated mission. However, we remain concerned that they are doing so in spite of somewhat restrictive funding. In fiscal year 1987, RR&D's funding amounted to only 8.3 percent of the total research budget, down from the fiscal year 1986 proportionate level of approximately 8.5 percent. We remain extremely concerned that, without adequate funding, this RR&D Service will be placed in a position of falling behind in meeting the rehabilitative needs of disabled veterans.

While the DAV certainly supports full funding of the VA's research program and its stated mission, we are, nevertheless, concerned over the seemingly large disparity between funds dedicated to basic medical research versus both rehabilitation research and development, as well as health systems research and development.

As you will recall, Mr. Chairman, this subcommittee held a hearing during May of 1984 to receive testimony regarding the VA's research programs on prosthetics and rehabilitation. At that time the DAV testified as to what we viewed as a rather severe and, in fact, counterproductive fragmentation of services that existed by the very structure of the agency's various programs dealing with prosthetics and related research endeavors. We find it distressing to again relate our view that the VA's prosthetic and related research programs are not yet fully in place and functioning as a cohesive, productive unit.

During November of 1984, then Administrator Harry Walters approved the Department of Medicine and Surgery's plans to implement yet another reorganization attempt of prosthetics and rehabilitation research services. That plan was endorsed by the interested veterans service organizations, primarily at that time the DAV and the Paralyzed Veterans of America.

Mr. Chairman, recognizing that problems still exist in the implementation of that reorganization process, the Assistant Chief Medical Director for Clinical Affairs established during May of this year a Prosthetics Reorganization Post-Implementation Evaluation Task Force. That Task Force consisted of VA Central Office employees and representatives from both the DAV and the PVA.

Mr. Chairman, nearly all of the 33 specific recommendations made by that Task Force have a direct and/or indirect impact on the Rehabilitation Research and Development Service concerning its priority areas of interest. It is the DAV's firm belief that the approval and expeditious implementation of an action plan to set those recommendations in motion will, in fact, bring all prosthetic related services—including the Rehabilitation Research and Development Service—into a cohesive unit that can only serve to better fulfill the mission of the VA and the needs of disabled veterans.

That task force, Mr. Chairman, in the context of today's hearing, identified two issues that we feel are certainly worthy of mention to the subcommittee at this time. The first was alluded to by Mr. DeGeorge, and that is the vacancy in the position of Deputy Assistant Chief Medical Director for Prosthetics and Rehabilitation Services. The DAV also urges the VA to move forward in a quick manner to identify an appropriate individual who has the necessary leadership and qualifications and background to assume that position.

The second issue was one contained in part of the 1984 reorganization, and that consisted of a memorandum of understanding that was prepared between the then Assistant Chief Medical Director for Professional Services, currently referred to as Clinical Affairs, and the Assistant Chief Medical Director for Research and Development. The stated purpose of that memorandum was to identify specific responsibilities to ensure that the rehabilitation research and development program would most effectively meet its assigned mission and the goals of improved operation sought by the organizational reassignment of the Rehab R&D service to the Assistant Chief Medical Director for Clinical Affairs within the reorganization of prosthetics.

That portion of the memorandum regarding budget actions was referred to only as an interim operating procedure. However, the permanent solution was also clearly identified and described as the new Deputy Assistant Chief Medical Director, working in concert with the Assistant Chief Medical Director for Clinical Affairs and the Assistant Chief Medical Director for Research and Development who would be charged with making formal recommendations on the processes necessary to achieve a separate line item for rehabilitation research and development funding.

Mr. Chairman, it has been determined by that task force that the memorandum of understanding did not result in its stated purposes. Additionally, that memorandum, identified as containing in-

terim operating procedures, has existed unchanged for nearly 3 years now.

It is our belief that in order to meet the stated purpose of that portion of the reorganization, and to streamline the budgetary procedures of the Rehabilitation Research and Development Service, action should be undertaken by the VA, certainly with input from all interested parties, and to revisit that issue and develop procedures to ensure that an adequate budget process is developed for that vital service of the Veterans' Administration.

Mr. Chairman, that concludes my summarization. Thank you.

[The prepared statement of Mr. Gorman appears on p. 102.]

Mr. MONTGOMERY. Thank you very much.

Mr. Cullinan.

STATEMENT OF DENNIS M. CULLINAN

Mr. CULLINAN. Thank you, Mr. Chairman. I will extract from my statement.

Mr. MONTGOMERY. Without objection, all the statements will be put in the record in full.

Mr. CULLINAN. On behalf of the more than 2.8 million members of the Veterans of Foreign Wars and its Ladies Auxiliary, I wish to thank you for this opportunity to present our views with respect to the the VA's program of medical research.

We believe we must never lose sight of the fact that a viable, top-quality health care system cannot exist without both research and education to expand the body of medical knowledge and enhance the provision of care. Research conducted by the Veterans' Administration itself, along with the research carried out in conjunction with DOD and other entities, is an essential component of the total VA health care system that serves the veteran patient both directly and indirectly.

The VA's efforts in the areas of biomedical, prosthetic and rehabilitation and health care services research is essential to affording the veteran patient proper care. This research expands the body of medical knowledge, thereby increasing our understanding of the nature of various disabilities and diseases, thus allowing better diagnoses and treatment. When a high quality research program exists at a given VA medical center, it strengthens health care delivery because of the close association with patient care that takes place at the facility. This leads to the validation of various treatment modalities, showing some to be highly effective, others to be less so, and then revealing some to be totally ineffective. This allows for the most effective treatment of the patient and, very importantly, provides the means whereby the veteran patient can be afforded the most modern means of care, while reducing the potential for harming him through the injudicious or unnecessary use of certain drugs or other medical techniques. Health care research provides the means whereby we may separate the wheat from the chaff; it determines what is effective and what is not.

In caring for this Nation's aging veteran population, the VA must quickly devise more effective and efficient means for providing health care, and the VA research program is playing a major role in doing just this.

It is the VA's research program which will enable the Department of Medicine and Surgery to better and more efficiently answer this challenge. For one, the Geriatric Research, Education and Clinical Centers, GRECCs, are playing an essential role in the further development of the VA's capability to provide maximally effective and appropriate care to older veterans. GRECCs represent a highly innovative and important attempt to bring together in one setting all three sides of the health care triangle—that is, education, patient care, and research. This is then brought to bear on the problem of caring for this Nation's rapidly aging veteran population.

Another area of concern pertinent to research is AIDS. The AIDS epidemic continues to grow and has an increasingly serious impact on the VA health care system. It is only through medical research that this dread disease will be defeated. The VA's research program will play an essential role in both devising the means to cure this disease and the methods to care for those who are now suffering from it.

Despite the tremendous contribution now being made by the VA in fighting AIDS, it is our belief that only additional research will eventually lead to the total elimination of AIDS. We believe the VA, with its extensive medical research program, can play a strategic role in the formation of an AIDS policy. The VFW would further point out that for the VA to properly fulfill this profoundly difficult and important role, it must be provided appropriate funding and other resources needed to get the job done.

In summation, we would say, just as the VA's program of research is essential to the overall provision of health care to this Nation's veterans, the three basic components of this research program—biomedical, prosthetic, and rehabilitation, and health care services research—are all essential to the overall VA research program. All three deserve and need support and funding from the Congress, and no one of these should be diminished or provided with inadequate moneys for the benefit of the other. All three are very important; all three are necessary for the proper provision of health care to this Nation's veterans.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Cullinan appears on p. 109.]

Mr. MONTGOMERY. Thank you very much.

Dr. Rowland.

Dr. ROWLAND of Georgia. Thank you, Mr. Chairman. I just have one question to ask.

I notice, Mr. DeGeorge, you said the administrative costs were about 6 percent of your budget for funds that you disburse for research?

Mr. DEGEORGE. I don't believe I gave a percentage, sir, but I can provide the percentage.

Dr. ROWLAND of Georgia. I don't know where I got that 6 percent from, then.

Mr. DEGEORGE. I don't recall giving a percentage, sir.

Dr. ROWLAND of Georgia. Okay. Well, let me ask you this: How do you go about establishing your priorities for the distribution of your funds?

Mr. DEGEORGE. First of all, the organization's board of directors depicts and looks over and approves a total budget for the organization. Budget requests are submitted by the executive director for staffing and for programs. The executive director, previous to his recommendation, also, in preparing his budget proposal, receives budget requests from each department director within PVA.

Dr. ROWLAND of Georgia. I have no further questions. Thank you very much.

Mr. DEGEORGE. Excuse me. Then on the research aspect, SCIRF, the Spinal Cord Injury Research Foundation for PVA, has its own board and they make their request through their board and then also through PVA.

Mr. MONTGOMERY. Thank you, Dr. Rowland.

Mr. Stump.

Mr. STUMP. No questions.

Mr. MONTGOMERY. Mr. Rowland.

Mr. ROWLAND of Connecticut. Thank you, Mr. Chairman.

First let me congratulate all three of you on your excellent testimony. I just would like to follow up on a question I have to Mr. DeGeorge.

In your testimony, with reference to research, you highlight two aspects of the research problem. One is adequate funding; the other one is dynamic leadership. As you know, this committee has worked hard on the funding aspect of it, and perhaps we could do more with regard to dynamic leadership.

You make reference to the fact that there was a position, the Assistant Chief Medical Director for Clinical Affairs, which has not been filled.

Mr. DEGEORGE. Deputy Assistant.

Mr. ROWLAND of Connecticut. Deputy Assistant.

Mr. DEGEORGE. Yes, sir.

Mr. ROWLAND of Connecticut. That goes back to 1984. Was that when the post was first established?

Mr. DEGEORGE. I believe so, sir, in the reorganization plan.

Mr. ROWLAND of Connecticut. To your knowledge, does it appear that the post was ever filled? In other words, have we ever had anyone in that position?

Mr. DEGEORGE. I can't truly answer that at this point, but I would be happy to provide that information to you.

Mr. ROWLAND of Connecticut. But, at the very least, it's vacant now and you think that that post would be important in highlighting the research services?

Mr. DEGEORGE. It would be most important not only for research but for the total coordination of programs, concerning especially spinal cord injured veterans, and all veterans, I might say.

Mr. ROWLAND of Connecticut. Are there any other thoughts you might have for dynamic leadership and ways that this committee could help in facilitating the priorities that you have been placing before us?

Mr. DEGEORGE. First of all, the answer is yes, we could. But I would rather the appropriate staff and directors of PVA sit down with members of the committee and/or yourself in another setting and discuss it at greath length.

Mr. ROWLAND of Connecticut. We look forward to that, Mr. DeGeorge. Thank you.

Mr. MONTGOMERY. Thank you.

For the other two witnesses, do you know of any spinal cord injury research funds that your organizations gives to hospitals, universities, or to the VA?

Mr. GORMAN. Mr. Chairman, the DAV, as a national organization, is not in the habit of disbursing funds specifically for, in answer to your question, spinal cord injury research, or, for that matter, any great amount of moneys to any specific research. I think, the most notable project that we were involved with was back in the late 1970's and into early 1980 on post traumatic stress disorder, Operation Outreach, which I think transformed into what we now know as vet centers and the like. Since then, I don't think there has been anything that the organization has contributed.

However, there are some of our State departments across the country that I'm sure do contribute significant amounts of money to a specific VA medical center in their districts and States for the purpose of research endeavors.

Mr. MONTGOMERY. You don't control that from the national level—

Mr. GORMAN. No, sir.

Mr. MONTGOMERY. —but the States can do the funding.

Well, I think you shouldn't. I think it certainly needs to be encouraged, like the State veteran nursing homes in different areas, where these State organizations certainly can help.

Mr. CULLINAN. Mr. Chairman, I am not aware of any moneys the VFW has specifically targeted on a national level for spinal cord injury disabilities. However, I do believe our departments and our State organizations do make contributions. I don't know what they are precisely or where they were targeted, though.

Mr. MONTGOMERY. If there are no further questions, I would like to thank the subcommittee members for staying for the whole hearing.

Mr. DEGEORGE. Mr. Chairman, excuse my interruption.

Mr. MONTGOMERY. Go ahead.

Mr. DEGEORGE. I just want to clarify Dr. Rowland's question. I stated that approximately $6 million was provided for spinal cord reserarch projects within the VA, out of a total of $200 million in the VA budget for research.

Thank you.

Mr. MONTGOMERY. That's what I understood you said.

The subcommittee now stands adjourned, subject to the call of the chair.

[Whereupon, at 11:20 a.m., the subcommittee was adjourned.]

APPENDIX

STATEMENT OF HONORABLE JOHN PAUL HAMMERSCHMIDT
BEFORE THE SUBCOMMITTEE ON HOSPITALS AND HEALTH CARE
HEARING ON VA MEDICAL, PROSTHETIC AND REHABILITATION RESEARCH PROGRAMS

IN READING OVER THE TESTIMONY PRESENTED TODAY, ONE CANNOT HELP BUT BE PROUD OF THE SIGNIFICANT IMPROVEMENTS TO THE QUALITY OF LIFE VA'S HEALTH RESEARCH HAS MADE FOR OUR NATION'S VETERANS. THE IMPRESSIVE ARRAY OF VA RESEARCH SUCCESSES HAVE SPUN-OFF TO ENSURE BETTER HEALTH CARE FOR ALL AMERICANS. THE CONTRIBUTIONS THE VA HAS MADE IN THE AREA OF HEALTH CARE IN GENERAL, AND IN THE AREA OF HEALTH RESEARCH IN PARTICULAR, ARE INCALCULABLE.

WHILE ENSURING THAT OUR VETERANS RECEIVE QUALITY HEALTH CARE ON A DAY-TO-DAY BASIS, THE VA ALSO CONDUCTS VITAL RESEARCH INTO SOME OF THE MOST DIFFICULT CHALLENGES FACING MEDICAL SCIENCE.

RESEARCH CONDUCTED BY THE VA HAS HELPED TO CONQUER TUBERCULOSIS, TO DEVELOP THE HEART PACEMAKER, AND TO PERFECT ORGAN TRANSPLANTS...TO MENTION BUT A FEW. THE VA IS ALSO A WORLD LEADER IN THE RESEARCH AND TREATMENT OF SPINAL-CORD INJURIES, IN THE DEVELOPMENT OF ARTIFICIAL LIMBS AND IN THE TREATMENT OF ALCOHOLISM.

SPECIAL NOTE SHOULD ALSO BE MADE OF THE MANNER IN WHICH THE VA HAS ADDRESSED THE SERIOUS NATIONAL PROBLEM OF AIDS. THE VA HAS ACCOMPLISHED SIGNIFICANT AIDS RELATED RESEARCH. THE VA HAS EFFECTIVELY PROTECTED AND EDUCATED ITS HEALTH CARE WORKERS REGARDING THE DISEASE. AND MOST IMPORTANTLY, THE VA HAS TREATED AND CARED FOR THESE PATIENTS IN A COMPASSIONATE MANNER.

THE VA HAS ACCOMPLISHED ALL OF THIS WHILE A MEDIA HYSTERIA AND TESTING CONTROVERSY SWIRLED AROUND IT. THE PEOPLE AT DM&S INVOLVED WITH THIS DISEASE, FROM THE POLICYMAKERS TO THE HEALTH CARE WORKERS WHO CARE FOR AIDS PATIENTS, SHOULD ALL BE RECOGNIZED AND COMMENDED FOR THEIR PROFESSIONALISM.

STATEMENT OF JOHN A. GRONVALL, M. D.

CHIEF MEDICAL DIRECTOR

DEPARTMENT OF MEDICINE AND SURGERY

VETERANS ADMINISTRATION

BEFORE THE

SUBCOMMITTEE ON HOSPITALS AND HEALTH CARE

COMMITTEE ON VETERANS AFFAIRS

HOUSE OF REPRESENTATIVES

SEPTEMBER 9, 1987

Mr. Chairman and Members of the Subcommittee:

I am very pleased to have the opportunity to describe in some detail the Veterans Administration's excellent research program. From its beginning 41 years ago, the research effort in the VA evolved into an internationally recognized major contributor to medical science and to the advancement of practice in all areas of medicine. Virtually every issue of many major medical journals contains a substantial contribution from VA researchers. These contributions result in improved quality of life for thousands of veterans and save many lives. These are the direct and most tangible products of VA research.

I think it important, however, to emphasize that other indirect benefits accrue to the Department of Medicine and Surgery as a result of its active research program. VA scientists are the gate-keepers for the Department; through their research contacts they learn of the latest medical advances and make new technology

available for the treatment of veterans at the earliest possible time. Moreover, the presence of an active research program in a medical center creates a spirit of inquiry among the medical staff that is perhaps the best single means of assuring that veterans receive the highest quality medical care.

I. The VA's Office of Research and Development - General

In describing the VA's research program I wish to emphasize the features that make it a unique and highly successful program.

First, the VA's research program, by design, primarily supports the scientific investigations of VA physicians. Over 70 percent of investigators funded by the VA research program are direct patient care VA physicians. This aspect of VA research links it closely to the primary patient care mission. Physician scientists in the VA focus their research studies on diseases prevalent among the veteran patients for whom they provide care.

Concentrating the VA research effort on the physician scientist is the most effective and feasible means of assuring the relevance of VA research to patient care.

Second, the VA relies on a rigorous system of peer scientific review to determine where to invest its research dollars. All proposed research studies are carefully evaluated by committees of nationally eminent scientists who rank the proposed studies according to their scientific strength. One important element of this evaluation is the investigator's past record of productivity as measured by significant, published scientific reports. The

evaluation of proposed studies by our peer review system identifies those programs that are most likely to make important contributions to medical science. I want to emphasize that the VA's peer review system is carried out by committees of scientists whose members are drawn mostly from academic scientists who are not affiliated with the VA. This system of evaluation of VA science has the great advantage of avoiding the creation of an inbred (and by implication, a second rate) research program. As a result of our peer review system, the VA is assured of using its research dollars in the support of the very best scientific studies that are likely to lead to improved medical practice.

I would like to turn now to a description of the VA's three research programs, each conducted by a separate organizational unit called a Service: Medical Research Service, Health Services Research and Development Service, and Rehabilitation Research and Development Service. The first two of these Services, operate under the auspices of the Office of the ACMD for Research and Development. Rehabilitation Research and Development Service reports to the ACMD for Clinical Affairs through the Deputy ACMD for Prosthetics Services Research and Development. As you know, each of these Services has a separate line item in the VA's research budget and funds are allocated to the three services as they are appropriated by the Congress. Within each research service, funds are allocated to support individual research programs based on the scientific evaluations of the peer review system already described. On occasion, areas of research are

identified that are especially ripe for research investment, and announcements of special opportunities for research support in high priority areas are made periodically by each research service. I want to emphasize that decisions to invest funds in selected areas are not taken lightly, because each dollar invested means a dollar less available for support of the infrastructure of VA research - the individual research projects funded through peer review. Such special investments are made when it appears that an unusual opportunity exists for VA scientists to advance the state of the art of medical practice in a selected area. Such is the case with the current special investment in AIDS research.

II. Medical Research Service

The medical research program of the VA has as its mission the support of high quality research by VA scientists that can lead to improved diagnosis and treatment of VA patients. Medical Research Service supports a balanced program of investigation in basic medical science and clinical research in medicine, mental health and surgery. There are approximately 2,500 investigators supported by VA appropriated funds and an equal number supported from other sources (e.g. from other Federal agencies, foundations and industry).

Some recent highlights in the VA's medical research program include the following:

- o A Cooperative Study showed the effectiveness of treating congestive heart failure with a drug combination that

dilates small arteries (hydralazine and isosorbide dinitrate). This was the first report of an effective treatment to prolong life among those affected by this common condition.

- The William S. Middleton Award, presented annually in recognition of outstanding achievement in biomedical research, was given in 1986 to Aaron J. Marcus, M.D., of the VA Medical Center, New York, N.Y. Throughout his career Dr. Marcus sought to increase understanding of the mechanisms of blood clotting and intravascular thrombosis. His 1970 demonstration of the interaction of aspirin with blood platelets, resulting in an inhibition of clotting, has led to his more recent work in the 1980's on natural inhibitors of clotting in the treatment of stroke and coronary artery disease.

- Two VA research teams were included in the three different groups of researchers simultaneously announcing their identification of a parathyroid hormone-like tumor factor. If this factor operates in cancer patients as it does in the laboratory, its overall effect could be to release abnormally high amounts of calcium into the blood (hypercalcemia). Such a release could damage organ systems throughout the body. Hypercalcemia occurs in 25% to 35% of patients with solid tumors of the lung and breast. Researchers regard the identification of the new factor as a significant advance in understanding

a possible cause of hypercalcemia in patients with cancer.

Research activities are funded by the Medical Research Service through four distinct programs.

A. Merit Review Program

Approximately 75 per cent of the VA's Medical Research Service funds are expended through the Merit Review Program to support projects conceptualized, planned and implemented by scientists at VA medical centers.

Proposals to undertake investigator-initiated studies are developed at the local level and reviewed by the medical center's Research and Development Committee and appropriate subcommittees on human and animal subjects. Once approved at the local level, the proposal is then submitted to the Medical Research Service in VA Central Office where it is rigorously reviewed in our Merit Review Program. The scientific evaluation of research proposals is carried out by 14 standing Merit Review Committees organized by medical discipline and composed of national experts drawn primarily from academic medical centers. The Merit Review system is organized in this manner to assure that we support only meritorious scientific studies.

The investment of such a large portion of resources in the Merit Review Program reflects our conviction that science and medicine are most likely to advance in a system that allows scientists themselves to choose the problems that they wish to study, and

supports those proposed research projects that peer experts believe are most meritorious. In the VA this concept results in the support of over 2,000 investigators who work in virtually all areas of biology, medicine, psychiatry and surgery. VA scientists supported by the Merit Review Program are exploring the pathological processes that result in cardiovascular disease, diabetes, Alzheimer's disease, schizophrenia, alcoholism, cancer, and other diseases. Other VA laboratories are attempting to develop new and effective therapies for spinal cord injury, gastrointestional diseases, neurological disorders, behavioral disorders and AIDS and other infectious diseases to mention but a few examples.

B. The Cooperative Studies Program

The Cooperative Studies Program supports large-scale multihospital clinical trials that evaluate promising new medical and surgical therapies. Because the VA's research program is intimately linked to its patient care effort, significant economies are achieved by carrying out controlled clinical trials in the VA medical care system. In evaluating the relative effectiveness of alternative treatments, data must be pooled from large numbers of patients treated with an identical protocol. Such studies can efficiently be performed in the VA medical care system utilizing research designs and statistical methodologies developed in our Cooperative Studies Program.

The VA has carried out some landmark clinical trials that established effective therapies for tuberculosis, psychoses, and

hypertension. Examples of current VA Cooperative Studies include evaluation of drugs for the treatment of epilepsy, heart disease and hypertension in the elderly, and the evaluation of new surgical techniques for the treatment of laryngeal cancer and lower limb vascular occlusions.

C. The Career Development Program

Through the Career Development Program, the VA trains young physicians for careers in biomedical research. This highly competitive program supports the research training of approximately 200 young physicians who work under the supervision of established VA scientists. As with all research support, applications are evaluated by a panel of national experts in science and research training. The graduates of the Career Development Program become the next generation of leaders in clinical research in the VA. This program is our investment in the future to insure the availability of a pool of well trained clinician-researchers to head the clinical departments of VA medical centers and to advance the practice of medicine through their research.

D. High Priority Programs

Under this program, Medical Research Service on occasion sets aside research funds to support studies in disease areas that are prevalent among veteran patients and where a special research opportunity exists. Examples of such targeted research efforts include the establishment of two centers for the study of the biological basis of schizophrenia, several programs in basic and

clinical research in alcoholism, and studies in the basic biology of aging and cancer. The newest high priority area is research in AIDS.

Medical Research Service has chosen high priority program areas very selectively. This policy preserves most dollars for support of the infrastructure of the VA's research program under Merit Review, Cooperative Studies and Career Development. It should be emphasized that studies supported in these three programs reflect the patient care problems prevalent among veteran patients because they support primarily VA physician researchers. In some sense, all VA research could be said to fall under the high priority programs, because the choice of research topics by VA investigators is driven by the patient care problems they treat.

E. DOD-VA Cooperative Medical Research Programs

In FY 1987 an exciting new program of collaborative research between the DOD and VA was mandated by the National Defense Authorization Act. In this FY, $20 million were transferred from DOD to the VA for support of VA research of particular interest to DOD clinicians and scientists. Some 90 VA medical research projects were supported through this program.

In response to the opportunity created by the DOD-VA Cooperative Medical Research Program, the VA Research Office has solicited approved research projects to be carried out by collaborative teams of VA and DOD scientists. Some 100 such proposed studies have been submitted and are currently undergoing scientific review. The scientifically strongest of these collaborations

will be funded in April 1988. This program will result in the creation of a set of new research collaborations that will benefit VA and DOD research and patient care.

III. Rehabiliation Research and Development Service

A. Mission and Organization

The mission of the Rehabilitation Research and Development Service is to improve the quality of life of impaired, disabled and handicapped veterans. This is accomplished by conducting a program of research, development and evaluation of devices, techniques and concepts of rehabilitation to allow these veterans more functional independence in the activities of daily living.

To find ways to use advanced medical and engineering science and technology for the direct benefit of severely disabled veterans, special Rehabilitation Research and Development Centers have been established at VA Medical Centers in Palo Alto, CA and Hines, IL. A Rehabilitation Research and Development Unit -- smaller in scope than a center -- is in operation at the Decatur, GA, VA Medical Center, which is completely dedicated to Aging Rehabilitation R&D.

The Service also has established two units at Baltimore, Maryland: the Rehabilitation Evaluation Unit, a centralized evaluation program of prototype devices and techniques; and, the Office of Technology Transfer, a system for technology transfer and information dissemination which includes publication of the

Journal of Rehabilitation Research and Development, Annual Progress reports and Clinical Supplements to the Journal.

Rehabilitation R&D projects are conducted in the following priority areas: Prosthetics/Amputation/Orthotics; Spinal Cord Injury; Sensory Aids (Blindness, Deafness, and Communication Disorders); all with special emphasis on aging aspects and physical fitness. Continuing attention is being given to such critical issues as how best to organize these efforts; how to identify most effectively the areas of need and to stimulate quality Rehabilitation R&D proposals in these areas; and to transfer most efficiently and rapidly the products of research to benefit disabled veterans.

B. Current Research Activities

The Rehab. R&D Service has appproximately 180 ongoing centrally funded projects and approximately 90 percent of such funding is expended through its Merit Review program. Some examples of research topics addressed by these projects include: (1) computer-aided design and manufacture of prosthetic sockets, (2) Functional Electrical Stimulation to permit lower and upper extremities which are paralyzed to function, and (3) the efficacy of cochlear implants for profoundly deaf patients.

C. Patient Care and Education

The Director of Rehab R&D Chairs the Rehabilitation Education Program (REP) Committee. The mission of this committee is to provide education and training for VA health care providers to

encourage the use of newly available research information and to transfer technology within our health care delivery system for disabled veterans. The REP committee has representation from all Clinical Affairs services related to rehabilitation, the office of Academic Affairs, and the Special Teams for Amputations and Orthotics (STAMP).

D. Priority Setting and Relevancy to Veteran Health Care

In order to develop priority areas of emphasis, the Rehab. R&D Service utilizes the workshop method consisting of experts, and consumer representatives, within the fields to assess the current state of the art, previous advances, and patient treatment information. During the past year the Service held such workshops in the fields of Audiology and Speech Pathology, Dementia and Schizophrenia. During the coming year, the Service plans to hold workshops within the remaining priority areas and, together with the Department of Veterans Benefits' Vocational Rehabilitation and Education Service, concentrate the Rehab. R&D focus on vocational rehabilitation devices and technology.

IV. Health Services Research and Development Service

Health Services Research is a field of investigation that focuses on identifying the most cost-effective means of providing health care to patients. The HSR&D (Health Services Research and Development) Service, which became operational in 1976, emphasizes the use of research to improve patient care and to increase the capacity of the VA health care system to conduct and

apply health services research. The following are examples of recent accomplishments:

- A Special Issue of the Journal of Health Services Research (Vol. 20, No. 6, Feb. 1986, Part II) was devoted to VA HSR&D studies in care of the aged, and the implications of study findings for the nation.

- The most recent HSR&D Bulletin describes how influenza vaccination rates can be nearly doubled by mailing out low cost cues such as letters or brochures. A large proportion of the VA population is at high risk for influenza complications. Based on the findings of this study, the investigator concluded that an extension of this model to other VAMCs for a target population of 10,000 could save 30 lives over a six-year period at a net marginal cost of $141 per life saved.

- Chest pain is one of the common reasons for seeing a physician, and coronary artery disease is often the patient's principal concern. A method to determine which tests are necessary for the diagnosis of heart disease was designed, tested, and is in use at VAMC Palo Alto. The method suggested is based on a rating derived from patients' responses to questions about their chest pain history. The lower the score, the lower the likelihood of coronary artery disease and, thus, an ECG is less likely to be needed. Triage nurses can reliably and safely use the method as a

screening device and eliminate inappropriate use of diagnostic procedures.

- The use of GEU's (Geriatric Evaluation Units), with follow-up care in a Geriatric Clinic, yielded significant benefits for patients beyond those attributable to usual medical care. With respect to a targeted population of frail elderly patients, the benefits included significantly longer survival, and less use of acute care and long term institutional services compared with patients receiving standard inpatient and outpatient services. The benefits also included improved functional status and morale. GEU costs appeared to be more than offset over the twelve-month study period by cost avoidance in such areas as acute hospitalization and nursing home care. "If the study outcomes are extrapolated to the U.S. population," the investigator reported, "of the 8 percent of hospitalized patients 65 or older who are discharged to nursing homes, at least one half would be candidates for the GEU, and about one half of the candidates would be able to avoid nursing-home placement after receiving care on such a unit. For the nation as a whole that could mean a reduction of about 200,000 nursing home admissions per year."

The HSR&D Service continues to focus on important veteran health problems such as: care of the aging veteran, preventive health

care, rehabilitation services, improving VA operations, and evaluating the cost-effectiveness of patient care technologies.

HSR&D activities are conducted through three substantive programs:

A. Investigator-Initiated Research Program

The Investigator-Initiated Research program encourages and supports projects proposed and conducted by VA researchers, clinicians, and administrators to meet their identified information requirements. Each proposed project is reviewed for scientific merit by the Service's Scientific Review and Evaluation Board. The Board is comprised of 16 nationally recognized health science researchers, clinicians, academicians and administrators drawn from universities, medical schools, VA Medical Centers and private industry. Scientifically sound projects are then considered for funding by an HSR&D Council, which, through the Director, Health Services Research and Development, makes funding recommendations to the Assistant Chief Medical Director for Research and Development. In 1987, 68 HSR&D Investigator-Initiated Research projects are being supported at 35 VA medical centers.

B. Field Program

The HSR&D Field Program is a network of core VA staff assigned to selected field facilities, who collaborate with community institutions (e.g., schools of public health, research institutes) to accomplish the Service mission in their assigned

local areas. In 1987, nine HSR&D Field Programs encompassing 33 VA medical facilities are being supported; each VA medical center may contact an assigned Field Program for technical assistance in developing HSR&D projects.

Selected HSR&D Field Programs:

- Serve as a system-wide resource in a selected priority area (Such programs are expected to develop a research agenda in the assigned area and to provide leadership and technical guidance to all VA investigators seeking assistance in the area.); currently, system-wide resources have been designated in Seattle (long-term care/care of the aging); Durham (ambulatory care and preventive health care); and Ann Arbor (improving operational efficiency); and
- Provide HSR&D doctoral level training.

C. Special Projects Program

The Special Projects Program is designed to respond to the needs of VA system managers, principally in the VA Central Office, and to transform health services research findings into practice. Studies in this program area are developed under HSR&D guidance, peer-reviewed, and monitored to meet the need(s) identified. For example, the HSR&D Service currently is conducting evaluations in three major areas of interest: an evaluation of Adult Day Health Care (authorized by PL 98-160); an evaluation of a pilot program of Chiropractic care (PL 98-166); and an evaluation of a pilot

rural health care demonstration project (PL 99-500). The HSR&D Service also has completed and distributed a technology assessment of Extra Corporeal Shock Wave Lithotripsy; studies on the cost-effectiveness of lithotripsy; and, on nuclear magnetic resonance imaging.

HSR&D Service maintains close working relationships with other VA program areas with similar interests. For example, the Northwest Regional HSR&D Field Program based in Seattle works closely with the GRECC (Geriatric Research, Education, and Clinical Center) there in developing aging initiatives. GRECC employees submit investigator-initiated research projects; for example, the project discussed above on GEU's was conducted by a GRECC employee. As another example, the Medical District 23 Field Program is collaborating with the Salt Lake City Regional Medical Education Center and the VA's Office of Quality Assurance to develop initiatives in quality assurance research.

V. AIDS Research in the Veterans Administration

The current National interest in AIDS (Acquired Immune Deficiency Syndrome) research makes it appropriate to highlight this topic. AIDS is a devastating disease that primarily attacks young adults. AIDS is caused by a virus (called human immunodeficiency virus or HIV) that is transmitted by sexual contact or through contaminated blood or blood products. HIV infects and kills a specific type of white blood cell (the T-4 lymphocyte) that has a key role in regulating the body's resistance to infection. AIDS

patients develop serious and often fatal infections because the immune system is attacked and rendered powerless by the virus.

Researchers at VA medical centers are actively investigating the mechanisms by which HIV infection causes the complex medical conditions of immune dysfunction, dementia and rare cancers. By understanding the disease process, new therapies can be developed that will stop the progression of this viral disease and perhaps prove useful in other viral infections, as well.

A. VA Basic Research Studies of HIV Infection

VA researchers are investigating several phenomena in this area, including:

- The mechanism by which HIV disrupts resistance to infection. While it is well known that HIV infects and kills the T-4 white blood cells that regulate the body's response to infection, it appears that the severity of immune dysfunction in AIDS may result from an even more complex interaction between HIV and the immune system.

- The impact of HIV infection on the B cells of the immune system that produce antibodies. In addition to T-4 cell abnormalities these B cells also do not function normally in HIV-infected patients and may fail to protect AIDS patients from acute bacterial infections.

- o The molecular events by which HIV and other related virus injections lead to cancer development in man and other animals.

B. HIV Infection of the Central Nervous System

Examples of research in this area include:

- o studies of comparable brain infections by HIV in animals,
- o examination of the location and effects of HIV infection in brains of AIDS patients at autopsy, and
- o a prospective follow up study of a group of HIV-infected patients who have voluntered to be monitored by investigators to determine the progression of the viral infection to the brain and spinal cord.

C. The Development of New Drug for AIDS Treatment:

Few drugs are currently available for the treatment of <u>any</u> viral disease, but the severity of the AIDS epidemic has provided the incentive to many laboratories to design and test new antiviral agents that can stop the progression of HIV infection. Because HIV contains a special protein, unique to this class of virus and critical for its successful infection of cells, many drugs aimed at inhibiting this special viral protein are being developed and tested by VA investigators. Examples include:

- o The design and synthesis of a new drug (azido, ethyl dideoxyuridine) that shows promise of inhibiting HIV infection in cell culture tests. This drug, and similar

chemicals that inhibit essential viral functions without interfering with the functions of the patient's cells, are being tested in animals for possible use in AIDS patients.

- o Tests of promising drugs in mice that are infected with viruses related to HIV. Such animal studies are essential for identifying the most promising antiviral drugs for subsequent evaluation in human AIDS patients.

- o An evaluation of the efficacy of a new drug called zidovudine (formally azidothymidine or AZT), in veteran patients infected with HIV who have not yet developed the severe immune deficiency of AIDS. The question being addressed in this study is whether AZT can stop the progression of HIV infection before it causes serious disease.

VI. Conclusion

In conclusion I wish to emphasize the fact that the VA research program is a great success story. In its short history, VA research has contributed to advancement in all areas of medical practice. The program is now widely recognized as a major part of this country's national effort in research and will continue to contribute to improve the health and quality of life of veteran patients.

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Prepared Statement of Robert L. Owen, M.D.
Veterans Administration Medical Center of San Francisco
to the
U.S. House of Representatives Veterans' Affairs Subcommittee
on Hospitals and Health Care
September 9, 1987.

Educational and Professional Background

I've been associated with the Veterans Administration since 1965 when I went to the West Roxbury V.A. as a Harvard Medical Student. I rotated through the Veterans Administration Medical Center, San Francisco as a medical resident and trainee in Gastroenterology from 1970 to 1972. After deciding on a career in research and academic medicine I began my training in ultrastructural research at VAMC San Francisco in the Cell Biology Section where I discovered M cells in the human small intestine. These cells have subsequently been shown to be the early warning system by which the body detects infectious agents within the intestine. Since 1974 I have been a Staff Physician at the V.A. with clinical duties in internal medicine and gastroenterology and have carried out a basic research program supported by V.A. Merit Review. My research career has also been fostered by the V.A. Career Development Program in which I was Research Associate from 1975 to 1978 and Clinical Investigator from 1985 to the present. I am affiliated with the University of California San Francisco where I am now Professor of Medicine, Epidemiology and International Health. My research has also been supported in part by the NIH and the National Foundation for Ileitis and Colitis.

For the past 15 years my research has focused on intestinal infection and immunity. Some of the major questions we have addressed are:

- How does the body's immune system recognize infectious agents in the intestine so that immunological defenses can be activated?

-What are the characteristics of microorganisms and other antigens which cause them to be taken up by the intestinal M cells?

-What is the normal structure of the lining of the intestine and how is it changed in infection?

-How does the structure of the intestinal immune system change after infection with parasites or other diarrhea-causing organisms?

-What are the effects of congenital immune deficiency and immune deficiencies acquired following irradiation or medications on the ability to respond to intestinal parasites?

One overall goal of these studies is to understand enough about the intestinal immune system to be able to rationally plan vaccines and other strategies to protect against diarrheal disease and other infections (including AIDS) which enter the body through the intestine.

AIDS Related Research

In addition to specific basic science research projects for which I have been funded I have been encouraged as a physician investigator within the V.A. to apply to clinical problems the special investigative skills which I have developed in ultrastructure, immunology and infectious disease. Consequently we have been involved with AIDS in two ways since the epidemic began. In the basic research area we have re-examined our studies of intestinal immunity to see what implications they might have for AIDS. As an example we have developed experimental models for immunological aspects of AIDS, examining the effect of helper T-cell deficiency in congenitally T-cell deficient nude mice and in mice depleted of T-cells with monoclonal antibodies. Because of my experience I have consulted on the care of AIDS patients with diarrhea and intestinal dysfunction for which no obvious cause was apparent. Using the ultrastructural capability and experience developed in our laboratory through basic research, we were among the first to recognize Mycobacterium avium as a cause of intestinal damage and malabsorption in AIDS. We also investigated and reported the affects of two previously rare intestinal parasites Isospora belli and Cryptosporidium in AIDS patients with diarrhea and wasting. This information was communicated to other physicians locally, nationally and internationally by verbal presentations and publications.

Microsporidium - A New Intestinal Infectious Agent

Recently, we have identified microsporidis, a tiny single cell parasite within the intestinal lining cells, in a patient with AIDS and a 40 pound weight loss. Microsporidia had been recognized less than half a dozen times in man prior to the AIDS epidemic. Microsporidia itself is one of the oldest infectious agents (more than 2,000 million years old) and lives in cells of other animals, because it is unable to breathe on its own. It has caused major economic consequences by destruction of honey bees, silkworms and fish. In rabbits it is common and has been known to affect the brain. When microsporidia spores are eaten they enter intestinal lining cells and spread to other tissues with varying effects depending on location.

In AIDS patients, the form of microsporidia which we found remains within intestinal lining cells, destroying them and reducing the body's ability to take in nutrients. Using the electron microsope we have microsporidia and its life cycle in small intestinal biopsies. We found that stains which usually show other parasites at the light microscope level don't work with microsporidia. In collaboration with Lynn Garcia at UCLA we examined our patient's stool for microsporidia but were unable to detect these spores which are too small to be seen with the light microscope by currently available methods. Other forms of microsporidia have been found in the liver and muscle of AIDS patients. Because microsporidia is known to affect the brain of rabbits, microsporidia might also play a role in the mental changes which occur in AIDS patients. Preliminary serology studies in Sweden indicate that 12% of unselected adults and 33% or more of AIDS patients may have been infected by microsporidia at some time. We plan to study how common microsporidia is in AIDS patients from the U.S. and Africa, in order to determine how often microsporidia is a factor in the intestinal wasting in AIDS, which is referred to as "Slim Disease" in Africa. As easier methods for diagnosis of microsporidia are developed, we anticipate that it will also be found to be a factor in diarrheal disease in persons with normal immune systems and may possibly be a factor in medical conditions affecting a variety of parts of the body.

Clinical Role in AIDS

Experience with AIDS has been a two-way street. Treating AIDS patients has not only been a great challenge to our Medical Center and other V.A. Medical Centers but has also contributed to our understanding of how the body works. We did not fully appreciate the importance of the immune system in maintaining normal health prior to the AIDS epidemic. Now we realize that the great variety of cancers which have appeared in AIDS patients reflect the importance of immune surveillance in eliminating malignant cells as they first occur and in eliminating infectious agents which cause cancer. AIDS has also shown us that infectious agents may be suppressed but not eliminated by immune defenses and can reoccur when these defenses are lowered not only by AIDS, but also by medications, therapeutic irradiation or other factors. The extreme degrees of infection which have occurred in AIDS patients have brought new infectious agents to our attention which had previously been overlooked. Cryptosporidium was almost unknown before the AIDS epidemic; now blood studies indicate that 50% to 80% of normal adults have had it sometime in their lives. Development of tools for diagnosing Cryptosporidium in AIDS has meant that these tools are now available for detecting this agent when it causes diarrhea in day-care centers, among farm workers and elsewhere. Microsporidia infection may be of similar significance, not only for AIDS victims but for all of us.

Rapid communication and sharing of experience in AIDS has demonstrated the interdependence of the private and public sectors in medicine. In 1984 because of our experience with AIDS we received a request from a small private hospital in Mississippi to transfer a veteran with symptoms of AIDS to San Francisco. The patient preferred to stay near friends and family since definitive treatment was unavailable anywhere. With concurrence of the Director of the VA Medical Center in San Francisco, I visited the hospital in Mississippi, briefing and reassuring physicians and nurses on the available diagnostic and therapeutic possibilities, explaining recommended precautions and pointing out those that were excessive and unnecessary. Subsequently, I and other physicians at the San Francisco VAMC were available by phone, as necessary, for discussions of problems as they arose. The patient was well managed in his home setting and experience in dealing with this new medical challenge was shared and disseminated.

MANAGEMENT OF NON-APPROPRIATED RESEARCH MONIES

Subsequently, the Veterans Administration furnished the following information:

The ICR (Institute for Clinical Research, Inc., of Washington, D.C.) was established to provide a mechanism to manage non-appropriated research money for the VA so as to overcome problems inherent in the use of either the General Post Fund or the administrative support of an affiliated university. Relying on the VA DM&S Manual, M-3, Part I, Section 5.01 (b), we started our activities with the authorization of our local R&D Committee and the Medical Center Director. Our private, corporate structure affords the flexibility and staff support lacking in the Post Fund, while the personal involvement of VA managers and investigators assures the federal oversight and accountablility absent in the universities.

Funds administered by ICR currently support 54 projects at the VA Medical Center. Through these projects, some 1250 patients, for whom conventional treatment has been unsuccessful, have elected to enter research protocols involving the use of research drugs. A number of these patients have been kept alive and been able to leave the hospital because of the availability of research drugs, having failed treatment with standard medicines. The new treatments are available only by participating in drug development studies, mostly in the late, pre-FDA approval stage. Carrying out these projects and doing them properly, both medically and legally, requires a substantial staffing

committment. Thus, the current ICR payroll includes 43 employees, or 17 FTEE (Full Time Employee Equivalent) by federal calculations. There are 9 full-time employees, all on (WOC) "without compensation" appointments to the VA, including 2 physicians, 4 nurses, 1 administrative/clerical assistant and 2 technicians. Part-time employees total 34, including 12 nurses, 5 pharmacy aides, 7 administrative/clerical people, and 10 technicians.

Currently, there are 35 VA Investigators aided (none of whom receive any money personally through ICR), 33 of whom are devoted to clinical research on patients and 2 to laboratory research. In addition to drug company funds, we are currently administering 2 American Heart Association grants. Besides these personnel, most of whom spend their time working with patients, these non-VA funds have provided a $30,000 gastrointestinal video endoscopy unit and 27 personal computers. This equipment is used heavily for routine patient care as well as for research.

Administrative expenses of the ICR, for bookkeeping, tax returns and routine legal fees, have run less than 2% of total expenditures and have been more than covered by the interest earned on unspent funds; these costs have thus not been subtracted from either the grantor's expectations or from direct benefits to the VA. The remainder of these investment proceeds have also been used to support VA missions.

In answer to a specific question posed, no ICR salary, income, or other emoluments has gone to any VA physician. Nor should one

have, as these research activities are part of their official missions and employment responsibilities. None of the Directors of ICR has been paid any fees. As a non-profit 501(c)(3) organization, there have been no profits paid to anyone.

An investigation of ICR records by the Inspector General of the VA (File no. 6IQ-011, closed on January 27, 1987) "disclosed no violations of Federal criminal statutes or other applicable agency regulations. Corporate records appeared to be properly maintained and no misuse of corporate monies by either corporate directors or physician/investigators associated with SUBJECT was detected." Some VA employees, other than physicians, have been employed by ICR after their federal tours of duty have ended, on an hourly basis. These employees have scrupulously attempted to fully comply with all applicable VA regulations. In addition, strict and careful records were maintained of their ICR activities and their VA supervisors were contacted to make sure there was no adverse impact on federal performance.

The final question concerned the important issue of control and oversight of these private activities. Corporate governance has been by a Board of Directors and a President, who meet a few times a year. The by-laws state that the corporation is devoted to supporting research and educational activities at the Washington, D.C. VA Medical Center. Policies are set by the Directors, who include three VA physician administrators, ex-officio (the Chief of Staff, the Chief of the Medicine Service, and the Associate Chief of Staff for R&D), and two investigators on the staff. These choices were made to assure

that the interests of the Medical Center and of its patients are preserved. This arrangement is also intended to assure the participation of persons knowledgeable about agency conflict-of-interest regulations, ongoing and proposed research projects, research resources, and the participating professional and non-professional staff. As the chief operating officer, Dr. Richard Levine has daily control and signature authority (shared with the Secretary-Treasurer, who works solely at home) over every ICR expenditure, personnel action (including the approval of salary levels), and specific interpretations of policy. In general, permitted expenditures must be for the purposes (if any) expressed by the grantor, conform to the generally accepted goals and activities of academic medicine and meet the criteria set by the IRS as tax-exempt, non-personal expenses.

The Chief Operating Officer's activities are reviewed by the other Board Directors, both in scheduled meetings and in frequent consultations on policy matters, by the Medical Center Director in Research semi-annual briefings and in other contacts, and informally by the Chiefs of Personnel, Fiscal and other Medical Center staff and supervisors because of the open character of the ICR. The entire written records of the ICR were reviewed by the VA Inspector General last year, with the satisfactory outcome noted above. Financial records have been examined each year by an independent CPA who prepares our Form 990 (Non-profit tax return) and who has several times performed a financial review, always with satisfactory findings.

REHABILITATION RESEARCH AND DEVELOPMENT PLANS AND ACTIVITIES

On the behalf of my Service, I sincerely appreciate the Subcommittee's request to provide a more detailed description of the current work and plans with Rehabilitation Research and Development. As you know Rehabilitation R&D projects are conducted in the following priority areas: Prosthetics/Amputation/Orthotics; Spinal Cord Injury; Sensory Aids (Blindness, Deafness, and Communication Disorders); all with special emphasis on aging aspects and physical fitness.

CURRENT RESEARCH ACTIVITIES

As previously mentioned, the Rehab. R&D Service has 180 current ongoing centrally funded projects, of which 122 are merit reviewed and the remaining 58 are core funded or pilot studies. Approximately 90 per cent of such funding is expended thru its Merit Review program. The following is an overview of projects by priority area, in addition to those cited in the testimony:

PROSTHETICS/AMPUTATION/ORTHOTICS

Highlights of the current 56 Rehab. R&D Service projects (46 per cent of all merit reviewed projects) within this priority area are:

- Evaluative study of all commercially available artificial feet to better match the product to the amputee's needs.
- Seattle ankle and components -- a six-way motion ankle and energy storing shank for use with the Seattle Foot.
- Prosthetic material improvements: lightweight endoskeletal for increased athletic ability; sturdier exoskeletal for aging amputees.
- Improved surgical procedures for amputations and presurgery diagnostic technology.
- Phantom pain -- how to alleviate and improve coping.
- Structural and functional properties of ligaments for better repair.
- Mylo-electrical prostheses for upper extremity amputees utilizing remaining musculature and computer chips to emulate hand function.
- Hip implantation technique and materials improvements.
- Computer aided model for lower back pain evaluation and treatment transferable to health care delivery systems.
- Control motor track testing after recently completed stroke.

SPINAL CORD INJURY

Title 38, Sec. 4101(c)(1), states that the VA's "... program of medical research (including biomedical, prosthetic, and health care services research, and stressing research into spinal cord injuries and diseases and other disabilities that lead to paralysis of the lower extremities.)" The Rehab. R&D Service second priority of Spinal Cord Injury addresses that legislated mandate and also includes research aimed at upper extremity paralysis. Highlights of the current 31 ongoing Rehab. R&D projects (25 per cent of all merit reviewed projects) in the SCI priority area are:

- Improved wheelchairs:
  a. development of national wheelchair standards.
  b. linear synchronous motors for powered wheelchairs.
  c. sports and fitness wheelchairs.
  d. seating cushion.
- Technological adaptors for the return of sexual function.
- Automobile adaptive equipment -- the Unistick Vehicle Controller (An adaptation of the NASA Lunar Rover for quadriplegics).
- Better methods of nerve repair and evaluation.

SENSORY AIDS

Highlights of the current 33 (27 per cent of all merit reviewed projects) ongoing Rehab. R&D Service projects within this priority area by subcategory are:

DEAFNESS

- The cooperative studies program relating to the clinical trials of cochlear implants for the profoundly deaf veteran.
- Digital hearing aids.
- Computerized adaptive methods for hearing aids.
- Testing of vestibular (balance) function.
- Computer adapted lip reading test.

BLINDNESS

- Feasibility of satellite locaters, which can inform the blinded individual his or her location in real time.
- Use of electroretinogram to predict retinal cell activity.
- Spatial relationships to facilitate internal and external environment adaptation.
- Quantifying visual impairment.

3./

COMMUNICATION DISORDERS

- Valve prostheses for tracheotimized patients.
- Technique for augmenting communication for intensive care patients.
- Assessment of the swallow reflex in patients with dysphagia.

AGING

Highlights of the special area of emphasis of aging for all three of the established Rehab. R&D priorities are:

- Electronic travel aids to orient the elderly or confused person.
- Computer language treatment for aphasia patients.
- Spatial orientation related to way finding.
- Wandering behavior of the elderly and electronic technology for communication and patient tracking by health care staff.
- Assessment of changes in visual spatial relationships due to aging.
- Devices for the aerobic exercises of the elderly.

AGENDA FOR THE FUTURE

The Rehab. R&D Service has a number of initiatives that it is working on for the next fiscal year:

- Exploring the feasibility of limb transplantation.
- Further increased efforts in the expeditious commercialization process of the results of research.
- Planning the development of a dedicated FES Center.
- The establishment of an Automated Mobility Aids Fabrication Center. (CAD/CAM prosthetic sockets).

PROGRAM HONORS

In closing, the continued Subcommittee's interest is especially appreciated in light of the awards bestowed within our program. Specifically these honors included:

- Presidential Award for Design Excellence (Seattle Foot).
- President's Committee on the Employment of the Handicapped Distinguished Service Award.
- Interagency Committee on Information Resources Management (IAC/IRM) Special Award for Creative/ Innovative Application of Information Resources Management, --awarded jointly to Richard D. Steele, Ph.D. Palo Alto VAMC.
- Dr. Savio L-Y. Woo, Professor of Surgery and Bioengineering at the University of California San Diego School of Medicine was elected Chairman of the American Society of Mechanical Engineers.

TESTIMONY OF KENNETH L. DAVIS, M.D.

I am Chairman and Professor of Psychiatry at the Mount Sinai School of Medicine, and a staff physician at the Bronx Veterans Administration Medical Center. Prior to my appointment as chairman on July 1st, I was the Chief of Psychiatry at the Bronx VA, a position I held since 1979. I have been a physician in the Veterans Administration continuously since 1974. In addition I direct one of the two Schizophrenia Biological Research Centers that have been established in the Veterans Administration, and one of the first five federally funded Alzheimer's Disease Research Centers, the only one of those initial centers based at a Veterans Administration Medical Center.

The essential point of my testimony can be summarized by quoting the conclusion of the Institute of Medicine's report on Research and Mental Illness and Addictive Disorders. That report stated that "research (in mental health) is not funded at a level commensurate with the economic costs it imposes on a society, or at a level comparable to research funding for other major disorders". This circumstance true for the nation at large, is particularly valid for the Veterans Administration health care system. Yet, knowledge of brain chemistry, physiology and structure has grown exponentially as have the tools to monitor brain function, tools that even extend to the living patient.

In the last two decades a virtual army of scientists with doctoral degrees in brain sciences has been produced. These individuals have begun to elucidate some of the most fundamental mechanisms of brain function, and in the process have generated huge quantities of data that can now be applied to the elucidation of major mental illnesses. Already we are seeing the some of the fruits of these efforts.

Perhaps no better area typifies the advances that the neurosciences have made in understanding neuropsychiatric disease than in Alzheimer's disease. Until approximately 1978 Alzheimer's disease was regarded as a mysterious condition characterized by degeneration of widespread areas of the brain. However, at that time three laboratories simultaneously reported that not all cells in the brain were dying, but rather there was exquisite specificity to the cellular damage in the Alzheimer's patient. Neurons that made acetylcholine seem particularly vulnerable in

Alzheimer's disease. Given the involvement of acetylcholine in learning and memory this was an important discovery.

In subsequent years it has been determined that a few other neurotransmitters and neuromodulators, chemicals that transmit impulses between cells, are affected in Alzheimer's disease, but this represents a very small proportion of all the neurotransmitters and neuromodulators that exist in the brain.

The implications of these findings were obvious to scientists attempting to develop a pharmacotherapy for Alzheimer's disease. It was possible for the first time, to conceptualize a rational approach to the treatment of Alzheimer's disease, namely the reversal of the specific neurotransmitter deficits through the administration of drugs. This approach has now received widespread attention and some notable success. In fact, the national study to test tetrahydroaminoacridine (Tacrine or THA), in Alzheimer's disease, a study that I am coordinating, is a direct outgrowth of this approach to the treatment of Alzheimer's disease. The THA study will determine the proportion of Alzheimer's patients that may be helped by THA, the degree of improvement that the drug produces, as well as the safety of its administration.

No doubt subsequent drug development will be based on the results of these clinical studies as well as the more basic studies that have elucidated the abnormalities in Alzheimer's disease. Already investigators around the country are conceiving of therapies that combine drugs to reverse more than just the deficit in acetylcholine that exists in Alzheimer's disease, but to reverse the acetylcholine deficit as well as an abnormality in norepinephrine.

In 1978 a diagnosis of Alzheimer's disease was exceedingly difficult to make. Accuracy of diagnosis could often be as poor as 50%. This circumstance was in part the result of the fact that a definite diagnosis of Alzheimer's disease requires the demonstration in brain of classical pathological abnormalities that define the disease, the neurofibrillary tangles and senile plaques. Such tissue is, of course, only obtained at autopsy. However in the last 10 years enormous strides have been made to improve the accuracy of diagnosis.

After extensive clinical work correlating various diagnostic criteria in the living patient, with histopathological changes found at autopsy

specific criteria for Alzheimer's disease have been established that, when utilized by the clinician, have a high degree of diagnostic accuracy. Still, this approach has its limitations and some degree of error. Consequently numerous scientists are attempting to develop a laboratory test for Alzheimer's disease. Enormous progress has been made in this area. Peter Davies at the Albert Einstein College of Medicine, and Dennis Selko at the Massachusetts General Hospital have both identified proteins that may lead to a simple diagnostic test in the living patient.

As impressive as this progress has been perhaps, even more striking discoveries have derived from investigations of the clinical and molecular genetics of Alzheimer's disease. There is now very convincing evidence that heredity plays a major role in the development of Alzheimer's disease. It appears that a family history of Alzheimer's disease increases one's risk for ultimately being affected by the disease approximately four-fold. In fact if an individual's siblings or parents manifested Alzheimer's disease in their life, the likelihood that such an individual would also experience this devastating disease is 50%, if they live to age 90.

As frightening as these numbers appear to the layman, to the scientist they provide real hope. For the first time a clear path exists for understanding the basic mechanisms that may cause Alzheimer's disease. Already the application of molecular biological techniques to this problem offer the hope that an "Alzheimer's gene, or genes" may be found in the forseeable future. Thereafter the focus of investigation will shift to discovering factors that can prevent the expression of this gene, or altering the consequences of the products that are expressed by this gene.

Thus in approximately 10 years a disease that was poorly characterized, little understood, and without any treatment has moved to a point that in the forseeable future there is the likelihood of some rational pharmacology that will offer modest though clinically meaningful symptomatic relief, and perhaps somewhat further into the future an approach to its prevention. How was so much accomplished in so short a time? In part the awareness that was brought to the problem by public interest groups such as the Alzheimer's Disease and Related Disorders

Association, as well as national leaders of the National Institute on Aging such as Bob Butler and Frank Williams have resulted in an enormous increase in federal funding for Alzheimer's research. The availability of long term stable funding has enticed some outstanding neuroscientists to commit their laboratories to understanding this disease, with obvious success. This circumstance is fortunate for the Veterans Administration, as the agency will face a huge increase in the number of veterans with dementia as the population it serves continues to age.

Another major mental illness with a profound cost to the United States health care system in general, and the VA in particular, is schizophrenia and other chronic psychoses. Although progress has not been as rapid as it has been with Alzheimer's disease, there is cause for modest optimism. Advances in brain imaging technologies, the application of molecular biology to neurosciences, neurochemistry, population genetics and neuropsychology have placed this field at a point where it is pregnant for advancement. For example, it is likely that in the near future the dopamine receptor will be identified and fully characterized. This information will lead to not only better antipsychotic agents, but a far better understanding of schizophrenia than was ever previously possible. Similarly the characterization of other neurotransmitter receptors and the processes that carry the signal from receptors to the cell will be rapidly forthcoming, and have important implications for neuropsychiatric disease. The commitment that is being considered by Congress during this session to substantially increase federal funding for schizophrenia research can, particularly at this juncture, have an enormous impact on progress in this field of inquiry.

The population of veterans served in our hospitals argues very persuasively for the importance of a major commitment to understanding neuropsychiatric disease. In the first half of 1987 the Veterans Administration had an average daily census of 55,000 inpatients. Seventeen thousand of these patients were on psychiatric services, and 50% of another 10,000 intermediate care cases also carried a psychiatric diagnosis. Hence on an average day in the first half of 1987, 22,000 of 55,000 inpatients, or approximately 40% of all VA beds were filled by psychiatric patients.

Another way to look at the activity of the Veterans Administration with respect to psychiatry is simply to count the number of inpatients who were taken care of in the first half of 1987, and the proportion of those that had a psychiatric diagnosis. 561,000 veterans received inpatient care in the first half of 1987 of which 108,000 were psychiatrically ill. Thus by this measure of patients, that is independent of length of stay, 20% of all admissions to the Veterans Administration's inpatient units in the last 6 months were psychiatric.

A similar assessment comes from a review of ambulatory visits. There were approximately 4,000,000 ambulatory visits for the first 6 months of 1987 to mental health services. This represents 22% of the 18.5 million total visits to the Veterans Administration. In summary, 40% of VA beds are filled by psychiatric patients, they reflect 20% of all admissions, and 22% of all outpatient visits. By any measure a substantial proportion of the VA's resources are directed to psychiatric patients.

However what is both remarkable and disquieting is the disproportionate distribution of resources to these patients relative to the commitment to other medically ill individuals. The table below illustrates this point.

Per Diem Costs of VA Patients for the First Half of 1987

	Medicine	Neurology	Surgery	Psychiatry	Intermediate Care
Direct care costs	$175.00	$177.00	$266.00*	$101.00	$88.00
Education costs	20.00	20.00	37.00	11.00	0
Clinical research costs	10.00	10.00	12.00	5.00	0

* (includes OR costs)

These numbers derive from the consolidated 14-4 form (this table appears on page 93, table 16 of the "Summary of Medical Program" compliled by the Associate Deputy's Administration for Management Office of Information and Statistics, Veterans Administration). The sum of the comparisons that this table offers are rather striking. For example almost twice as much staff physician costs are dedicated to education and research in medicine, neurology and surgery than are in psychiatry. This, of course, despite the fact that psychiatric patients occupy 40% of the VA's beds and reflect 20% of their patients. Furthermore, less clinical dollars are committed to the care of the psychiatric patients, by almost 50%. Not surprisingly, fewer mental health professionals can commit very much time to research and education when, so few are asked to do so much. Unfortunately, in recent years, with the system of prospective reimbursement (i.e., DRGs) psychiatric services have fared even more poorly in proportion to other areas of medical care. Indeed, other health care systems have exempted psychiatry from the prospective system.

This same basic finding of a relatively disproportionate allocation of resources to psychiatry extends to the allocation of research grants through the VA's merit review boards. Between 1983 and 1986, a period of seven review cycles, the VA received approximately 589 applications per cycle. - Seventy-four percent of all the grants the VA received were approved, and 55% both approved and received funding. However, only 66 applications per cycle, or approximately 12% were in the area of behavioral science research, and only 52% of those were approved and 42% approved and funded.

An even more problematic circumstance exists for the career development award system. For example, between the fall of 1982 through the spring of 1984, two full years of review, while there were 182 career development award positions being funded only 2 went to psychiatrists. Fortunately, the VA research and education divisions have responded forcefully to this problem and established a special entry level program to encourage psychiatrists finishing their residency to engage in basic research. Hopefully, with an aggressive program to make psychiatrists aware of this new opportunity more applications will be received.

It could be argued that the funding for research within the VA in behavorial sciences in particular, and even all research in general, need not occur. That such funding should come through the National Institutes on Health. Although this argument would negate the extraordinary scientific acheivements of VA investigators including attainment of the very highest prizes in science, this argument is most destructive to the very fabric of patient care. The importance of research to the quality of care that the VA delivers is best exemplified to me by our experience at the Bronx VA Medical Center. When we arrived at the Bronx we found that the Psychiatry Service had the lowest rating from the Joint Commission on Hospital Accredidation. Our patients' satisfaction survey showed general dissatisfaction in the quality of service being administered. This was further reflected in an unusually low occupancy rate for any psychiatry service. Furthermore, the hospital could not recruit its full compliment of psychiatry residents, nor of psychiatrists. The situation was so serious that our medical school refused to rotate its psychiatry residents to the Bronx VA because they believed the quality of care and educational opportunities could not justify their commitment.

We have completely reversed the situation. Our service now has the highest possible joint commission hospital accredidation. The occupancy rate exceeds 95%. Patient satisfaction surveys show a high degree of satisfaction with the program. Both internal and external reviews have been laudatory. Our residency program has grown, and is completely integrated with the medical school. There are no vacancies in the residency program. Every staff physician position is filled with high quality people including a number of individuals who have not just M.D.s but M.D. and Ph.D. degrees. Our staff comes from the NIMH, Yale, Harvard and Stanford. These improvements could not have occurred without making research an integral part of the clinical service. It was only through a high quality research program funded through the VA and NIH that we were able to recruit physicians to our service. Over 10 graduates of our program hold academic positions. A program in clinical investigation was the main impetus for the medical school to jointly recruit residents, and thereby improve the quality of the housestaff in our program. The respect that our program has generated within the hospital is reflected

in the attitude of almost all the health professionals and nurses who come in contact with psychiatric patients. Simply put, without a research program, the psychiatric care we would be delivering at the Bronx VA would be at best primitive and at worst tragic.

What we have done at the Bronx can hopefully be extended to other Veterans Administration Medical Centers and thereby upgrade the quality of the care they deliver. However, to do so would necessitate closing the disparity between the resources that are allocated for the care of psychiatric patients, and the resources granted for education and research programs to physicians that serve psychiatric patients.

An argument that has been traditionally used to justify this disparity is that the quality of mental health research and researchers, or the problems that they address, do not justify any greater allocation of research dollars than mental health is already receiving. The Institute of Medicine report that was cited at the beginning of this testimony addresses this question. In fact it states;

> "to the extent that the lag in funding for research on mental disorders and addictive states may have been based partly on the belief that scientifically productive and clinically important research opportunities were meager in comparison to more traditionaly biomedical fields, that view now is totally outmoded."

Hopefully the sampling of the research that has already been conducted in Alzheimer's disease, and is on the threshold of being performed in schizophrenia makes this clear. However, so in fact does the record of VA psychiatrists in successfully competing for major National Institute of Health grants, their publication records and acceptance in major scientific organizations.

When departments of psychiatry competed for the establishment of the first generation of mental health clinical research centers a few years ago, of the first five funded two were located at Veterans Administration hospitals. Similarly of the first five Alzheimer's Disease Research Centers one is located almost exclusively at the VA, and at another the VA is the major collaborating site. Turning to the publication record of VA physicians in the best journals in psychiatry in the last half of 1986 16% of all articles that appeared in the American Journal of Psychiatry, 11% in the Archives of General Psychiatry and 23% in Biological

Psychiatry could be identified as emanating from Veterans Administration investigators. In comparison a review of the three major journals of internal medicine indicate that 7% of articles in the New England Journal of Medicine, 12% of publications in the Annals of Internal Medicine and 9% of articles in JAMA derive from researchers in the Veterans Administration. Thus despite less funding VA psychiatry is better represented than VA medicine in each field's best journals.

Of course it could be said that these achievements are restricted to a few atypical Veterans Administration hospitals. Indeed San Diego, the Los Angeles VA's, West Haven, the Bronx and Palo Alto are overrepresented. However I believe that the challenge we face is not to dismiss these successful programs as aberrations, but given the enormous proportion of the VA census already committed to mental health problems, to determine how to make other VA's comparable to those that have been successful in establishing high quality mental health research programs.

Some of the steps that are necessary have already been taken. For example an aggressive career development program particularly at the entry level can encourage young residents and fellows to stay in the VA as clinical and laboratory investigators. In addition the development of stable funding for programatically linked multi-investigator research that develops long term well organized facilities capable of conducting clinical investigation is essential. Already, the Veterans Administration has two Schizophrenia Biological Research Centers as well as centers in alcoholism. These programs can provide the core facilities that are necessary to clinical investigation. They also provide VA investigators with the opportunity to compete quite successfully with other non-VA investigators for NIH funds. Finally an exemption from the DRG system, and a commitment to enhance all aspects of the care of chronic psychiatric patients, with a particular emphasis on research and education is critical.

Thank you for the opportunity to testify before this esteemed committee.

STATEMENT OF
FRANK R. DEGEORGE, ASSOCIATE LEGISLATIVE DIRECTOR
PARALYZED VETERANS OF AMERICA
BEFORE THE
SUBCOMMITTEE ON HOSPITALS AND HEALTH CARE
OF THE
HOUSE COMMITTEE ON VETERANS' AFFAIRS
REGARDING THE
"IMPLEMENTATION AND OPERATION OF THE
VETERANS ADMINISTRATION'S PROGRAMS OF MEDICAL RESEARCH"
SEPTEMBER 9, 1987

Mr. Chairman and Members of the Subcommittee, Paralyzed Veterans of America appreciates this opportunity to express our views regarding the implementation and operation of the Veterans Administration's program of medical research. I am Frank R. DeGeorge, Associate Legislative Director for Paralyzed Veterans of America. As requested, I would like to comment on the present status of the relationship between the three major activities within the VA's research program: biomedical, prosthetic and rehabilitation, and health care services research.

The VA's research program is a vital ingredient in the agency's health care delivery system. The VA's contribution to medical science through its research activity, over the years, is well documented by this Subcommittee. These achievements have proven to enhance the status and quality of the VA health care system and the well-being of veterans and non-veterans alike throughout the nation.

The VA research program is of critical importance to PVA's members, all of whom have suffered spinal cord injury or dysfunction. Because of the catastrophic nature of these disabilities, a large percentage of our membership receive all or part of their health care directly from the VA. Advances in medical techniques and breakthroughs in biomedical and rehabilitation technology are, and should continue to be, directly related to the on-going care of these veterans for the benefit of the individual and the advancement of research itself.

Section 4101 (c) of title 38 U.S.C., in mandating the VA to conduct its overall research mission, specifically, elevates research into spinal cord injury and disabilities that lead to paralysis as the stated priority in the agency's medical investigatory effort. This section states:
"In order to carry out more effectively the primary function of the Department of Medicine and Surgery and in order to contribute to the Nation's knowledge about disease and disability, the Administrator shall, in connection with the provisions of medical care and treatment to veterans, carry out a program of medical research (including biomedical, prosthetic and health care services research, and stressing research into spinal cord injures and diseases and other disabilities that lead to paralysis of the lower extremities)." (emphasis added)

With this priority established, the Veterans Administration has one of the best opportunities in the federal government to be the national leader in the field of spinal cord injury and dysfunction. It is this research that holds, for all spinal cord injured persons, the greatest promise for improved physical well-being through advances in rehabilitation research and, ultimately, an end to paralysis itself through biomedical research. The research efforts of the VA, other federal agencies, and the private sector - including PVA's own significant research activities - have all made marked advances in neurological research during recent years. However, more can and should be done.

The quality of any research program can be assessed in terms of the availability and consistency of funding, which determines the extent of the

research conducted, and the direction provided by those who administer the research program in managing those funds and establishing research priorities.

PVA, by directing its own research program, can well understand the frustrations that funding limitations impose in tackling any major research project. At the same time, since 1976 through our Spinal Cord Research Foundation (SCRF), we have been able to direct over $4.2 million to researchers who are conducting investigations in many fields related to spinal cord injury and spinal cord disease. In 1986, SCRF awarded a total of 18 research projects. Sixty-five per cent of the total funds awarded were in basic scientific areas, particularly those related to the promising field of spinal cord regeneration. Applied medical research awards amounted to 25 per cent and technological and psycho-social awards comprised 10 percent. The basic thrust of the PVA research program is two-fold: first, to foster advancements in prosthetic, rehabilitation and biomedical activities to improve the quality of life and health of the spinal cord injured; second, and equally important, to promote research and investigations in the field of spinal cord regeneration to eventually find a cure for traumatic spinal cord injuries.

PVA's research activities cover a wide range. For example, PVA funded research on a new design for a cushion for wheelchair users that greatly reduces the incidence of debilitating and even life-threatening decubitus ulcers. PVA has funded promising functional electrical stimulation research which can restore movement and mobility for paralyzed individuals. At our Annual Convention this year PVA approved a $ 1.5 million grant to support, in conjunction with Yale University, a Center for Neurological and Regeneration Research, to be established in New Haven, Connecticut.

PVA works closely with the VA's research efforts to help coordinate and sponsor cooperative activities in spinal cord injury. For this reason, we remain concerned that the VA maintains adequate funding and dynamic leadership for its research activities. As the following table indicates, the appropriations for VA medical and prosthetic research steadily declined from 1984 to 1986.

1984 - $217.7 m
1985 - $192.0 m
1986 - $181.1 m

In Fiscal Years 1985 and 1986, respectively, $6.8 million and $5.6 million were allocated by the VA for Spinal Cord Injury Rehabilitation and Regeneration Research projects. Of these amounts, only $3.99 million for Fiscal Year 1985 and $3.0 million in Fiscal Year 1986 were allocated for VA Rehabilitation Research and Development for Spinal Cord Injury. The balance was earmarked for biomedical regeneration and health systems research. While significant programs are being supported by these funds, PVA finds these amounts are a very small percentage of the total VA research budget and not at all in keeping with stated priority for SCI research mandated by title 38 U.S.C.

We greatly appreciate the efforts of this Committee for recognizing the importance of VA research in restoring dollars (FY 1987 - $190m) for these important activities. However, this year again, as you know, the Administration's proposed budget called for a decrease of 225 FTEE below the Fiscal Year 1987 level for medical and prosthetic research. This request represented a decrease of $6 million below the Fiscal Year 1987 level even after the $20 million from the Department of Defense was included for the VA/DOD cooperative research program mandated in Public Law 99-661. Again, we wish to express our appreciation to you, Mr. Chairman, and Members of this Committee, who rejected these proposed cuts, for restoring funding to the recommended level of $209 million for Fiscal Year 1988 - a recommendation that was also adopted by the House Committee on Appropriations. We also applaud the Committee's action to include $3 million in additional funding for important rehabilitation research. As you know, this proposal was strongly endorsed by PVA as contained in An Independent Health Care Budget For Veterans."

The VA cannot operate a viable research program without a funding base that keeps pace with the demand for research activity, inflation and personnel costs. Budget cuts and other funding shifts within the research allocation wreak havoc with the continuity and planning for quality research in all areas.

Geriatric Research, Education and Clinical Centers (GRECCs)

Over the past few years, PVA has become increasingly concerned about the effects of extended life-expectancy superimposed upon an existing physical impairment. Our members with spinal cord injury and dysfunction have already recognized the medical and health effects of living longer on the maintenance of independence. Reaching the ranks of the "elderly" is a mixed blessing if a good quality of life cannot be maintained.

The PVA Board of Directors (February 1987) adopted a resolution which gives prominence to these concerns, particularly as the aging processes affect the need for long-term care.

It is interesting to note that none of the GRECCs are focusing their research on specific, selected major disabilities in the elderly, although we have been made aware of the recent development of research activities on vision impairment and aging. Since we have found that there is a significant dearth of knowledge concerning aging with a long-term disability, such as spinal cord injury, the absence of an emphasis in any GRECC in this area is a significant omission.

PVA recommends that a VA medical center that has a Spinal Cord Injury Center and hosts a GRECC should be persuaded to add a responsibility for research into the area of aging with a long-term disability, with a particular emphasis on the elderly spinal cord injured patient. While we would prefer to see a new GRECC added to the existing ten GRECCs, this is probably not possible in the current budget environment. Nonetheless, such fiscal constraints should not be an insurmountable hurdle if this research area is added to an existing GRECC through the addition of resources that would include additional personnel, equipment, and supplies.

It is our understanding that the VA is presently considering an in-house proposal to expand the Geriatric Research Education and Clinical Centers (GRECC's) research study program to include the needs of aging spinal cord injured veterans. PVA fully supports this proposal.

The VA is in unique position to incorporate into its program on aging an inclusive investigative research profile on the psychological, medical, sociological, and economic needs of aging spinal cord injured veterans. Studies reflect that, for the most part, the SCI Veteran has received rehabilitation and information only as it pertains to the initial acute, post-traumatic and early phases of the injury. In the past, little attention has been paid to the correlation between the spinal cord injury and the aging process.

PVA would like to work with this Subcommittee and the appropriate VA officials to have the GRECC program address this vital area of research. PVA would appreciate your assistance, Mr. Chairman, in ensuring that the resources are identified to address the deficit of knowledge in this area, which can do much to improve the quality of care and life for those who are now aging with a long-term disability.

Rehabilitation Research and Development

PVA would like to underscore its support for the Rehabilitation Research and Development program. The three main areas of this $17 million effort focus on new technologies which can enhance the quality of life for thousands of disabled veterans; prosthetic and amputations; spinal cord injury; and sensory aids.

For instance, Rehabilitation Research and Development Services (RR & D) has been the primary support for the American National Standards Institute/ Rehabilitation Engineering Society of North America Technical Advisory Group (ANSI/RESNA) over the last 3 years in its development and testing of domestic and international wheelchair performance standards. The origin of this endeavor rests with funding from PVA and manufacturers, who continue their financial support along with VA funds. To date, the ANSI/RESNA Group has completed 11 of the 16 originally planned standards. These 11 standards have completed ANSI's public comment period, and for ANSI adoption is anticipated within the next 60 days. RR & D has committed itself verbally to continue support of the ANSI/RESNA Group towards the completion of the remaining 5 standards. It is important to note that these completed domestic standards have been accepted by the International Standards Organization.

When completed standards are available, the ANSI/RESNA Group, which includes engineering, manufacture, consumers, along with the VA, is embarking on an

implementation phase. RR & D, along with the VA's Prosthetic and Sensory Aids Service, the Office of Technology Transfer, and the Continuing Education Center, is centrally involved in planning for implementation. PVA, manufacturers, and ANSI/RESNA are pleased with the VA's active support of wheelchair standards as demonstrated by RR & D.

Another area of RR & D involvement, which is perceived as having great potential by PVA, is functional electrical stimulation (FES). PVA has presented its position on FES to this Subcommittee on previous occasions. We only wish to reiterate that support by urging the Committee to continue its support of RR & D stated priorities, to include all aspects of spinal cord injury rehabilitation.

Prosthetic and Orthotic Research and Development

The Veterans Administration has made great strides in the advancement of prosthetic research. For example, the so-called "Seattle Foot", which has been demonstrated before this Subcommittee, combines modern engineering and space-age plastics to greatly improve mobility and function to amputee veterans. The voice-activated robotic arm is a marvel of engineering using micro-chip technology to bring mechanical functional assistance to quadriplegics for certain daily living tasks. However, prosthetic aids for the SCI veteran can cover a wide spectrum of available devices, and it is safe to state that each individual's need for prosthetic aids are as unique as the person's disability.

Keeping this in mind, the development of so-called "low-tech" items can be as important in restoring functional abilities for SCI individuals and amputees as "high-tech" items and procedures, which cost millions to research and develop. A molded wrist-finger adapter, designed to hold a fork or pen to assist in self-feeding or writing, can be as important as a complicated integrated mechanical and electrical system which would permit a quadriplegic with little strength to operate a specially modified van.

Nowhere is this differentiation clearer than in the area of orthotic research. Advances in technology present an equal opportunity for the VA to keep pace with the development of new designs for body and leg braces, ambulatory assistive devices and other functional daily living devices for those who have limited range of motion. The opportunity exists, if properly emphasized, to transform a field that once relied on the "make shift" or, in the case of braces, mere "blacksmith technology" into one that can keep pace with the on-going development of new technologies in metallurgy, plastics and design.

In many ways, these items are not as "glamorous" as the "high-tech, big-ticket" projects, but their benefit to the disabled veteran is equally as important. PVA would request that the Subcommittee review the division of emphasis and extent of priority between prosthetic and orthotic research by funding allocation and project in order to insure that a proportionate emphasis is being placed by the VA in both these activities.

Health Systems Research and Development

Over the last 4 years PVA has developed a proactive relationship with the VA's Health Services Research and Development Service (HSR&D). In 1985, HSR & D, at both the Central Office and field program levels, participated in a technical review and field test of the VA's proposed SCI veterans registry. In 1986, the Regional HSR & D field program in Durham, N.C., successfully, conducted a feasibility study of a retrospective methodology to document and analyze the mortality of service-connected veterans. Presently, HSR & D is supporting, directly, a national mortality study of SCI veterans. Additionally, HSR & D is supporting a study at the North Chicago VAMC which is focused on a comparison of SCI health care provided by SCI and non-SCI VA medical centers.

PVA is pleased that HSR & D has demonstrated a willingness to consider proposals related to SCI. Each of the above-mentioned funded projects has been successfully completed in merit review. PVA will continue to work with HSR & D to ensure that appropriate and adequate research is considered and that a focus on SCI related research is maintained.

Although HSR & D has been able to support a broad range of projects during the last 4 years, it also has experienced administrative uncertainty regarding a permanent director for the program and its position among the other VA research programs. This program must be given the opportunity to

stabilize its leadership and position, if continued program success is to be realized.

Funding

Rehabilitation Research and Development, as well as Health Services Research and Development, have taken their fair share of budget cuts over the last four years. Historically, budget reductions have been across-the-board in VA research. However, this means, for instance, that a 10 per cent cut for the $175 million bio-medical research budget does not represent the same effect as a 10 per cent cut for the $17 million RR & D or $8 million HSR & D program. The overall cuts in these two programs, in the past, have seriously restricted investigation opportunities and the accomplishment of the VA's mission in these areas. At the same time, VA clinical personnel and clinical budgets have always been directly related in support for on-going VA research activities. However, as demands on clinical budgets have increased over the years, the sharing of resources, through this relationship, has obviously become strained, reducing the effectiveness and scope of all VA research operations.

For this reason, PVA recommends that the Congress encourage the VA to see that the allocations in the budget process between the three areas of VA research are accomplished fairly and in direct consideration of the research priorities stated in title 38 U.S.C. The VA, in setting appropriate divisions for funds between Biomedical, RR & D, and HSR & D should endorse previous policy within the agency which ensured that all affected departments and concerned entities within the agency are fully consulted as to present and future needs, prior to internal division of these budgetary allocations.

For the RR & D budget itself, the proposed $3 million addition for this important research in fiscal year 1988 would be a welcome addition to its current activities. However, the Congress and the VA should realize that because of recent successes in this field and the growth of new technologies and rehabilitative techniques, the demand for funding quality rehabilitation research projects is now, and will continue in the future, even with this increase, to outstrip the ability of the RR & D budget to fund many worthwhile projects which have such a direct bearing on the disabled veteran population.

The VA was, in the past, a world leader in rehabilitation research. PVA believes, that given the proper incentives and oversight, the agency can fulfill its Congressional mandate and, once again, assume its appropriate world leadership position in this field.

Prosthetic Services, Research and Development Reorganization

In 1984, following hearings on VA research conducted by this Subcommittee, the Administration endorsed a proposal which would recognize and consolidate all activities relating to prosthetics and rehabilitation research under the direction of a Deputy Assistant Chief Medical Director (DACMD) for Prosthetic Services, Research and Development. The purpose of the reorganization was to elevate and unify the administration of all components of rehabilitation research and clinical activities to help clarify and improve the VA's program mission. PVA was highly supportive of this reorganization proposal which, in fact, was the 5th attempt since 1976, by the VA, to reorganize these programs within the line authority of the Central Office.

The Office of the DACMD for Prosthetic Services, Research and Development is directly responsible to the Assistant Chief Medical Director for Clinical Affairs. PVA is aware that this position is currently vacant. We urge the VA to find and appoint a qualified individual to assume this position to, once again, bring dynamic leadership for these programs as called for in the 1984 reorganization plan.

We are also aware that a task force, convened by the Assistant Chief Medical Director for Clinical Affairs, has recently submitted its final report, reviewing the Prosthetic Services, Research and Development Reorganization. We strongly encourage the VA to fully review and consider these recommendations for adoption. Leadership and quality of management for any program in the VA can be as important to that program as the level of funding it receives. PVA pledges its full assistance to see that this goal is fully accomplished.

Mr. Chairman, in conclusion, PVA strongly advocates that VA spinal cord injury rehabilitation and regeneration research programs must be vigorously and enthusiastically driven by the process of good management practices and

adequate funding. A well-designed and administered program must reflect coordination, collaboration, and cooperative efforts, resulting in state of the art care, ultimate cure, and the prevention of spinal cord injuries. Such a plan must apply to all Spinal Cord Injured Biomedical, Rehabilitation and Research projects conducted by the federal government to specifically include the Veterans Administration in a leadership position.

The pursuit of Spinal Cord Injury, Biomedical, Rehabilitation and Regeneration Research must continue to receive the support and funding provided by Congress. In fact, increased funding should be considered as many worthwhile research proposals are presently being denied due to a lack of sufficient funding. PVA applauds the Congressional mandate in title 38 U.S.C., which should insure that a maximum effort be geared towards Spinal Cord Injury research conducted by the Veterans Administration. However, as previously stated, total funding for SCI research represents a very small percentage of total VA research dollars.

As previously stated, PVA urges the Congress to continue to provide the VA the necessary appropriations that very well could contribute to the end of lifelong spinal cord injury as a condition of the past.

Mr. Chairman, the importance of the VA's efforts in neurological research, and, particularly, spinal cord rehabilitation and regeneration research cannot be over emphasized. We hope that the VA's concern and commitment continues and that such effort will grow and prosper to benefit the nation's veterans and all disabled individuals.

Mr. Chairman, this concludes my testimony. I will gladly answer any questions that I can.

PARALYZED VETERANS
OF AMERICA
Chartered by the Congress
of the United States

December 2, 1987

The Honorable G.V. "Sonny" Montgomery
Chairman, Subcommittee on Hospitals & Health Care
House Committee on Veterans' Affairs
334 Cannon House Office Building
Washington, D.C. 20515

Dear Chairman Montgomery:

This is in reference to the Hospitals and Health Care Subcommittee of the House Committee on Veterans' Affairs hearing of September 9, 1987, regarding the Veterans Administration's medical, prosthetics and rehabilitation, and research programs.

During the presentation of PVA's statement, you requested specific information regarding the relationship between the VA and PVA's research and grants programs. This information is enclosed.

Thank you for your continuing interest in Spinal Cord Injury research, and for the opportunity to present our statement and additional materials. If I can be of further assistance, please do not hesitate to contact me.

Sincerely yours,

Douglas K. Vollmer

Douglas K. Vollmer
National Legislative Director

DKV/df

Enclosures

Paralyzed Veterans of America

SPINAL CORD RESEARCH FOUNDATION

The Spinal Cord Research Foundation (SCRF), formerly the Technology and Research Foundation, was established by the Paralyzed Veterans of America in 1975. SCRF is a modest-sized foundation which funds research projects and fellowships relevant to spinal cord injury. In addition to sponsoring basic research that will increase scientific knowledge toward a cure for spinal cord injury, SCRF also funds research that deals with applied medical, psychosocial and technological areas of importance to persons with spinal cord injury.

A tally of SCRF commitment to SCI research is shown in Table 1.

Table 1 - FY'85	FY'86	FY'87
$693,460.00	$662,958.00	$594,995.00

The average SCRF award is approximately $30,000.00 including a maximum of 8% indirect costs related to the research project. As can be seen in the attached list of funded grants, several grants (highlighted by green) provide support to Veterans Administration as well as to non-VA researchers. Additional research projects are done in collaboration with the VA or by researchers who have joint appointments with the VA as well as an affiliated university. Funding decisions are made by the SCRF Board of Trustees after grants have been subjected to a rigorous peer review process which assures a fair and balance scientific review.

801 Eighteenth Street, NW Washington, D.C. 20006. 202-USA-1300

PVA is in the process of working with the Yale University School of Medicine toward the support of a PVA/Yale Center for Neuroscience and Regeneration Research. It is planned that PVA with its chapters will contribute 1.5 million dollars over five years to fund a portion of the cost of the 7,000 square foot research facility on the grounds of the West Haven VAMC. The funds will also be used for the enhancement of the center's research program related to spinal cord injury (see attached).

The PVA is also seeking from Dr. Gronvall support for a Geriatric Research Education and Clinical Care Program hosted by a VA medical center with a SCI center, to receive additional resources and personnel to conduct an effective research program in Geriatrics/Gerontology for those aging with a spinal cord injury.

Attached is information about PVA's Education and Training Foundation.

Spinal Cord Injury
Education & Training Foundation

Paralyzed Veterans of America (PVA)
Spinal Cord Injury (SCI)
Education and Training Foundation

In 1980 the Paralyzed Veterans of America established a foundation, the "PVA Professorship of Spinal Cord Injury Medicine, Inc." In March of that year a term professorship, created for a period of five years, was awarded to Stanford University School of Medicnine. This was converted to a one million dollar permanently endowed chair in January 1984. The holder of that chair is Inder Perkash, M.D., Spinal Cord Injury Center, Veterans Administration Medical Center, Palo Alto, California.

In June 1985 the ETF Board of Directors changed the name of the Corporation from the PVA Professorship of Spinal Cord Injury Medicine, Inc. to the "PVA Spinal Cord Injury Education and Training Foundation", Inc. The purpose of the change was to expand the Foundation's scope to consider education and training grant proposals beyond professorships in SCI medicine. The "Guidelines and Procedures for Proposal Submission," issued in the spring or 1986, provided grants to institutions or individuals for the promotion of improved quality of spinal cord injury care through enhanced skill of the providers of that care.

In July 1986, the ETF Board expanded its scope still further to include grants for patient and family education. The new guidelines provide funding support to institutions, agencies, organizations and individuals to assure quality of care in spinal cord injury and disease by improving the abilities and competence of health professionals, persons with spinal cord injury and/or disease and significant others.

Grants will be awarded for:

- continuing education and training projects to improve the knowledge and skills of practicing health professionals in the care and management of individuals with spinal cord injury and disease.
- post - professional specialty traineeships for health professionals to expand the manpower pool of expert practitioners, educators and administrators in the field of spinal cord injury and disease.
- patient and family education proposals to improve the well-being of individuals with spinal cord injury and disease and enable them to reach their maximum health potential.

under the aegis of
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Spinal Cord Injury
Education & Training Foundation

APPROVED GRANTS-JULY 1986

PROPOSAL NUMBER	TITLE, PROJECT DIRECTOR, INSTITUTION, AMOUNT	DESCRIPTION
NDV-003 1st year of a 2 year project	"PVA Distinguished Lectureships at Seattle VA Medical Center" Joel A. DeLisa, M.D. Chief, Spinal Cord Injury Service Seattle VA Medical Center $8,415.00	Five experts in their fields came to Seattle to present lectures on the latest developments in their areas.
NNS-008	"Workshop on Neurorehabilitation of Central Nervous System Trauma" Lake Scheinberg, M.D., Chief of Neurology Albert Einstein, College of Medicine New York (funded by EPVA) $4,645.00	All day session for neurologist to learn about CNS trauma

In addition, ETF continued its commitment to the Stanford University School of Medicine's endowed chair in SCI Medicine by providing Stanford with a check for $200,000.00

Spinal Cord Injury
Education & Training Foundation

PVA SPINAL CORD EDUCATION AND TRAINING FOUNDATION
APPROVED PROPOSALS-JULY 1987

PROPOSAL NUMBER	TITLE, PROJECT DIRECTOR, INSTITUTION, AMOUNT	DESCRIPTION
SCC-003 2nd year of 2 year Project	"PVA Distinguished Lectureships at Seattle VAMC" Catherine Britell, M.D. Acting Chief, SCI VA Medical Center Seattle, WA 98198 $6,150	To bring 4 experts to Seattle to present a major lecture in the latest developments in his/her areas of expertise, participate in clinical rounds and team conferences. Lectures are video-taped.
NCC-011 1st year of 2 year project	"Spinal Cord Injury Education and Training in Action" (Scientia) Diane S. Huss, P.T. Education and Training Supervisor Deparment of Physical Therapy Woodrow Wilson Rehabilitation Center Fisherville, VA 22939 $40,000	To develop a model training program for physical therapists who care for spinal cord injured patients. Includes development of manuals and Video-tape program.
NCC-015	"Continuing Education Program for SCI Coordinators at Non-SCI Centers in Region 4" E. Jason Mask, ACSW Supervisory Social Worker (122) Veterans Administration Medical Center Hines, IL 60141 $17,000	To conduct a 1½ day training program for 20 SCI Coordinators in VA region 4 to increase knowledge of medical treatment and rehabilitation of SCI persons and available resources, services and benefits.
NCC-016	"Training Seminar for SCI Coordinators and Physicians at VA Medical Centers Without Spinal Cord Injury Services" Robert W. Hussey, M.D. Chief, SCI Center VA Medical Center Richmond, VA 23249 $9,046	To conduct a 2 day seminar for one SCI coordinator and one physician from each of 14 VAMC's in the Richmond SCI catchment area.

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EDUCATION AND TRAINING FOUNDATION - JULY 1987
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NCC-021 1st year of 2 year project	"An Educational Model for Spinal Injury: Linking VA and Community Resources" Charles Lang, III (Administrative Project Director) Director, Georgia Cooperative Health Manpower Program, Inc. Carl Vinson VA Medical Center Dublin, GA 31021 Helen Bosshart, ACSW (Clinical Project Director) Coordinator, SCI Home Care Program Spinal Cord Injury Service, Augusta VA Medical Center Augusta, GA $9,650	To establish linkages between SCI and non-SCI centers and update knowledge and skills of personnel working with SCI individuals through visiting lectureships at Augusta VAMC, regional workshops at non-SCI sites and community facilities and visiting faculty to non-SCI Centers. Educational modules will be developed.
NSO-022	"Occupational Therapy Graduate Traineeship in Spinal Cord Injury" William C. Mann, Ph.D. Occupational Therapy Department SUNY at Buffalo Buffalo, NY 14214 $7,000	To support one occupational therapy graduate student in an M.S. degree program. The school will build into the physical disabilities curriculum new courses, a research project and clinical experiences in spinal cord injury.
NSP-024	"Post Professional Traineeship" Martha Clendenin, Ph.D., P.T. University of Florida Gainesville, FL 32616 $15,731	To support two physical therapy graduate students in a M.S. degree program. The school will build into the neurological dysfunction specialty track didactic units, a research project and a clinical internship in spinal cord injury.
NCC-027	"The Aging Spinal Cord Injured Veteran - An Educational Program for Health Professionals" J. W. Rowe, M.D. Harvard Medical School Division on Aging 25 Shattuck Street Boston, MA 02115 $13,172	To plan, develop, conduct and evaluate an educational program for health professionals at the Geriatric Research, Education Clinical Center (GRECC) and Spinal Cord Injury Center (SCIS) at the Brockton/West Roxbury VA Medical Center.
NSM-028 1st year of a 2 year project	"Education and Training for a Fellow in Neurorehabilitation, Emphasis on MS" Jack S. Burks, M.D. University of Colorado Health Science Center Denver, CO $17,600	To support a physician in a two-year fellowship training program in neurorehabilitation with special emphasis on multiple sclerosis for board eligible, fully trained neurologists or physiatrists

PARALYZED VETERANS
OF AMERICA
Chartered by the Congress
of the United States

YALE/PVA CENTER

FOR

NEUROSCIENCE AND REGENERATION RESEARCH

FACT SHEET

BACKGROUND: The Yale/PVA Center for Neuroscience and Regeneration Research is a collaborative venture between PVA, Yale University School of Medicine and the West Haven VA Medical Center, The land for the Center, which is on the grounds of the West Haven VA, was made available to Yale by the VA in a precedent-setting long-term leasing arrangement. In the spirit of this joint effort, the Center, the School of Medicine and the VA will share facilities, expertise, and equipment, thus enhancing the efforts of each.

MISSION: The research that will be conducted at the Center will include basic research into functional regeneration of damaged nerve cells as well as practical research that will help people with spinal cord injury or a disabling disease, such as Multiple Sclerosis (MS), live fuller lives. Research at the Center will focus on the mechanisms underlying functional recovery following damage to the nervous system and on the ways in which recovery of function can be encouraged. Some of the research will be directed toward training future researchers who will develop new approaches to the care of patients with spinal cord injury or disease.

DIRECTION: The activities of the Center will be directed by Stephen G. Waxman, M.D., Ph.D., who will also serve as Professor and Chairman, Department of Neurology, Yale University School of Medicine. Dr. Waxman has distinguished himself throughout his career as a scientist and as a physician deeply concerned about the needs of individuals with spinal cord injury and disease. Since his early years at Harvard Medical School and Massachusetts Institute of Technology, and continuing during his tenure at Stanford Medical School and the Palo Alto VA Medical Center, Dr. Waxman has concentrated his research efforts on the molecular architecture of nerve cells in the brain and spinal cord, and the mechanisms that control growth and regeneration of nerve cells. He has made a number of important scientific contributions to the understanding of functional recovery in a variety of neurological diseases. On a more personal level, Dr. Waxman is a long-time friend of PVA, having been associated with PVA's Spinal Cord Research Foundation (SCRF) almost since its inception ten years ago and in his capacity as a founding member of SCRF's Scientific

Advisory Board. Dr. Waxman is currently a member of the SCRF Scientific Advisory Board and regularly contributes articles for publication in Paraplegia News. In addition, Dr. Waxman has spoken on his regeneration research at past PVA Annual Conventions.

THE FACILITY: The 7,000 square foot facility, which is scheduled for completion in the Fall of 1987, will feature a number of laboratories, one conference room, a resource center for students and fellows and adminisntrative offices. The building will be connected to the West Haven VA Medical Center via an all-weather breezeway. The building is, of course, fully wheelchair accessible. Dedication of the building, and a ribbon cutting ceremony is scheduled for the Spring of 1988.

PERSONNEL AND OTHER RESOURCES: The Center will be staffed by a multidisciplinary group of medical scientists with expertise in neurocytology, experimental neuropathology, immunology, developmental neuroscience and electrophysiology. Scientists working at the Center will have at their disposal the latest technological advances including electron microscopes, special fracture devices and other computerized equipment

CURRENT STATUS: PVA has made a commitment to help fund the center although official commencement of such an agreement awaits finalization of the particulars of the agreement between PVA and Yale University School of Medicine.

Revision Date: September 22, 1987

P V A
SPINAL CORD RESEARCH FOUNDATION
Funded Grants
1985 - 1987

Grant Name, Investigator(s) & Institution	Proposal No.	Total Amount & Date Awarded	No. Years Funded
Development and Regeneration of Afferent Motorneuron Contacts in Rat Embryos Lea Ziskind-Conhaim University of Wisconsin	NBR-489-5	$35,000 (05/85)	1
Lesion Induced Axonal Growth of Ascending Somatic Sensory and Motor Terminations in The Diencephalon Chisato Stanfield (fellow) The Salk Institute	NFR-496-5	$31,472 (05/85)	1
Recovery of Function and Anatomical Repair After Spinal Cord Transactions in Newborn and Adult Rats Barbara Bregman University of Maryland School of Medicine	NBR-497-5	$33,723 (5/85)	1
Spinal Cord Regeneration of Descending Locomotor Command Systems in a Lower Vertebrate, the Lamprey Andrew McClellan University of Iowa	NBR-501-5 SBR-501-6	$36,855 Yr. 1: $22,530 (05/85) Yr. 2: $14,325 (05/86)	2
An In-Vivo Model to Assess the Neurotrophic Function of Mammalian CNS Glia Gary Kukes Long Beach VA Medical Center	NBO-506-5	$9,100 (05/85)	1
Study to Determine if Localized Extracellular Proteolysis is a Requirement for Successful Regeneration of Nervous Tissue Nurit Kalderon Rockefeller University	NBR-508-5 SBR-508-6 TBR-508	$62,750 Yr. 1: $30,000 (05/85) EPVA Funded Yr. 2: $38,750 (05/86) EPVA Funded Yr. 3: $43,983 (05/87) EPVA Funded	3
Circulation and Metabolism in the Decentralized Spinal Cord Oscar Scremin Albuquerque VA Medical Center	NBO-510-5	$29,700 (05/85)	1
Growth Factors for Cortical Motorneurons Brooke Swearington Massachusetts General Hospital	NFR-514-5	$14,369 (05/85)	1
Development of an Artificial Spermatocele to Treat Infertility of SCI Persons L. Keith Lloyd University of Alabama at Birmingham	NBU-515-5	$33,143 (05/85)	1

Grant Name, Investigator(s) & Instruction	Proposal No.	Total Amount & Date Awarded	No. Years Funded
Laminin in Astrocyte Extracellular Matrix Promotes Axonal Regeneration Jerome Wujek Childrens Hospital Research Foundation	NFR-518-5 SFR-518-6	$62,005 Yr. 1: $29,000 (05/85) Yr. 2: $33,005 (05/86)	Withdrawn f 2nd year
Evaluation of a Novel SCI Model James Cullen (fellow) Research Foundation of S.U.N.Y. Syracuse, NY	NFR-520-5	$2,000 (05/85) EPVA Funded	1
A Collision Block Technique for Micturition Assist: Pre-Clinical Studies J. Thomas Mortimer (sponsors fellowship) Case Western Reserve University	NFU-522-5 SFU-522-6	$73,082 Yr. 1: $28,000 (05/85) Yr. 2: $45,082 (05/86)	2
Skin Temperature in Spinal Cord Injury Related to Skin Breakdown Michael S. Weiss Santa Clara Valley Medical Center	NAO-532-6	$33,620 (11/85)	1
Prospective Randomized Clinical Trial of Thyrotropin-Releasing Hormone (TRH) as a Therapy for Spinal Cord Injury Lawrence Pitts University of California, San Francisco	RAO-542-6	$61,020 (05/86)	1
Respiratory Dysfunction in Spinal Cord Injury: Control of Ventilation in SCI and Respiratory Sensation Reaching Consciousness Robert Brown West Roxbury VA Medical Center	NAO-547-6	$23,838 (11/85)	1
Plasticity in the Injured and Aging Mammalian Spinal Cord Harry Goshgarian Wayne State University	NBR-549-6	$31,428 (11/85)	1
Corticospinal Systems Peter L. Strick The Research Foundation of SUNY Syracuse, NY	NBN-564-6	$51,054 (05/86) EPVA Funded	1

Grant Name, Investigator(s) & Institution	Proposal No.	Total Amount & Date Awarded	No. Years Funded
Spinal Interneurons and the Generation of Locomotion Lloyd L. Glenn Ohio College of Podiatric Medicine	NBO-568-6	$32,725 (05/86)	Withdrawn
Spinal Cord Implants: Immunologic Studies Barry G. W. Arnason University of Chicago	NBR-569-6	$34,788 (05/86)	1
A Study of Phospho Proteins in a Regeneration Central Nervous System Tract Denis Larrivee (fellow) Cornell University Medical Center	NFR-572-6 SFR-572	$92,175 Yr. 1: $39,096 (05/86) EPVA Funded Adjustment $6,000 (11/86) EPVA Funded Yr. 2: $46.479 (05/87) EPVA Funded	2
An Implantable Sensor for Two Degrees of Freedom Position Transduction P. Hunter Peckham Case Western Reserve University	NDF-574-6	$31,316 (05/86)	1
Trial of a 5-Lypoxygenese Inhibitor in Experimental Spinal Cord Injury Lloyd A. Horrocks The Ohio State University Research Foundation	NBO-579-6	$45,760 (05/86)	1
Urinary Bladder Ganglion Reorganization Following Lesions August M. Booth University of Pittsburgh	NBU-585-6	$31,422 (05/86)	1
Fetal Spinal Cord Transplantation into the Chronically Injured Adult Rat Spinal Cord John D. Houle University of Florida College of Medicine	NBR-588-6	$32,540 (05/86)	1
Effect of Age on Axonal Sprouting in the Deafferented Dorsal Horn Peggy Mason (fellow) Massachusetts General Hospital	NFR-602	$23,000 (11/86)	Cancell
Nerve Fiber Growth in Culture on CNS and PNS Tissue Salvatore Carbonetto The Montreal General Hospital Research Institute Montreal, Quebec CANADA	NBR-605	$32,000 (11/86)	1
Chemical Dependence and Spinal Cord Injury Outcome Allen W. Heinemann Rehabilitation Institute of Chicago	NBO-611	$38,016 (11/86)	1

Grant Name, Investigator(s) & Institution	Proposal No.	Total Amount & Date Awarded	No. Yea Funde
Hepatic Oxidative Metabolism in Spinal Cord Injury Jack L. Segal **Long Beach VA Medical Center**	NAO-619	$32,710 (11/86)	1
Closed-loop Control of Functional Neuro-muscular Stimulation Using Implantable Force Sensors J.A. Hoffer University of Calgary, Canada	NBR-623	$30,991 (05/87)	1
Rapid Neuronal and Glial Changes in the Spinal Cord Harry G. Goshgarian (mentor) Wayne State University	NFR-625	$34,533 (05/87)	1
Neurochemical Correlates of Autonomic Hyperreflexia in an Animal Model Susan L. Stoddard Indiana University Foundation	NBN-633	$37,608 (05/87)	1
The Effect of a Gaba Agonist and a Gaba Antagonist on Motor Recovery Following Subtotal Spinal Cord Lesions Roger M. Harris University of Washington	NBR-635	$33,664 (05/87)	1
Regeneration of Spinal Projection Neurons In a Peripheral Nerve Environment Mary Blair Clark University of Maryland School of Medicine	NBR-645	$40,857 (05/87)	1
The Health And Functional Status of Aging SCI Persons: A Feasibility Study Using Cases From Stoke Mandeville Hospital Gale G. Whiteneck Craig Hospital	NOA-650	$14,967 (05/87)	1
Dorsal Root Axonal Regeneration in Adult Glial Deficient Mammalian Spinal Cord Francis J. Liuzzi (fellow) Case Western Reserve University	NFR-654	$38,340 (05/87)	1
Central Nervous System Regeneration in Adult Mammals: A Study of Inappropriate Terminal Axonal Contacts Albert J. Aguayo The Montreal General Hospital Research Institute, Canada	NBR-657	$42,435 (05/87)	1

Grant Name, Investigator(s) & Institution	Proposal No.	Total Amount & Date Awarded	No. Years Funded
Immunocytochemical Analysis of Localized Extracellular Proteolysis During Neuronal Development M. J. Anderson The University of Calgary, Canada	NBF-665	$40,093 (05/87)	1
International Symposium on Neural Regeneration Frederick J. Seil Portland VA Medical Center	NCR-666	$15,000 (05/87)	Symposium

STATEMENT OF
DAVID W. GORMAN
ASSISTANT NATIONAL LEGISLATIVE DIRECTOR
FOR MEDICAL AFFAIRS
DISABLED AMERICAN VETERANS
BEFORE THE
SUBCOMMITTEE ON HOSPITALS AND HEALTH CARE
OF THE
HOUSE VETERANS AFFAIRS COMMITTEE
September 9, 1987

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

On behalf of the more than one million members of the Disabled American Veterans and its Ladies' Auxiliary, inclusive of the thousands whose disabilities dictate the need to utilize various prosthetic appliances and devices, I welcome this opportunity to relate our views regarding the Veterans Administration's research programs.

Mr. Chairman, I would like to take this opportunity to commend you for the present, as well as historical interest, that this Subcommittee has shown in the arena of VA research, particularly rehabilitation research and development.

As you are aware, Mr. Chairman, the VA's program of research is comprised of three basic elements:

* medical research;
* health systems research and development; and
* rehabilitation research and development

Total Fiscal Year 1987 funding for the VA's research and development program is approximately $213 million. Of that total, $187 million is devoted to medical research; $8.1 million is allocated to fulfill the mission of health systems research and development; and $17.7 million is dedicated to rehabilitation research and development.

Medical research constitutes an important element in the Agency's efforts to furnish quality medical care to this nation's disabled veterans. The value of medical research may be witnessed via the development of new knowledge that tends to improve the diagnosis and treatment of diseases, particularly prevalent in the veteran population. Additionally, it is aimed at assisting the Agency to meet the needs of an ever-changing veteran population.

To meet this goal, the Office of Research and Development encourages research programs focused on health problems affecting the general veteran population. These include: schizophrenia, alcoholism, aging, spinal cord injury and tissue regeneration, post-traumatic stress disorder, Agent Orange, and health problems of female veterans.

Health Systems Research and Development (HSR&D) is intended to support health services and systems research activities to identify options, estimate costs, and provide information to allow clinical and administrative choices to be made among various alternatives.

Established HSR&D priorities are: operational systems, quality of care/quality assurance, cost effectiveness of health care technology, and managerial and clinical decision-making.

Mr. Chairman, it becomes apparent that in the current era of ever-changing methods of health care delivery, the results of

health systems research become invaluable tools to be used in providing quality health care services to disabled veterans.

The mission of the Rehabilitation Research and Development Service (RR&D) is to improve the quality of life and functional independence of physically disabled and handicapped veterans. This mission has become significantly advanced as a result of ongoing research projects in established priority areas of prosthetics/amputations/orthotics, spinal cord injury, and sensory aids.

Without question, Mr. Chairman, when discussing VA research endeavors, it is obvious that the efforts and accomplishments of RR&D have the greatest singular impact upon DAV members and, perhaps, disabled veterans as a whole.

While basic medical research is generic to the entire medical community, whether it be in the private sector or the federal government, it is our strong belief that if it were not for the federal government, specifically the Veterans Administration, rehabilitation research would be virtually non-existent in this country.

The bulk of all research conducted, especially in the private sector, is in the form of basic medical research. This type of research, unquestionably valuable and necessary, is often tedious and time-consuming with the possibility of tangible results becoming manifest only after years of study.

Conversely, rehabilitation research more often produces beneficial results in a comparatively short span of time. This results in disabled veterans, as well as the general population, being able to utilize these research findings and applications in order to lead a fuller, more meaningful and productive lifestyle.

During Fiscal Year 1987, the RR&D Service dedicated $5,369,000 (32.5% of its budget) to support 56 research projects dealing with prosthetics/amputations/orthotics; $3,850,000 (23.3% of its budget) supported 31 projects investigating spinal cord injury; and $3,200,000 (19.4% of its budget) was devoted to projects investigating various types of sensory aids.

Mr. Chairman, in our opinion, the RR&D Service is doing an admirable job meeting their stated mission. However, we remain concerned that they are doing so in spite of restrictive funding. In Fiscal Year 1987, RR&D's funding amounted to only 8.3% of the total research budget, down from the Fiscal Year 1986 proportionate level of 8.4%.

We remain extremely concerned that without adequate funding, the RR&D Service will be placed in a position of falling behind in meeting the rehabilitative needs of disabled veterans.

Mr. Chairman, the DAV strongly believes that RR&D efforts in prosthetics cannot be allowed to remain stagnant or regress. They must, out of sheer necessity, move forward due to the urgency of need which increases substantially when considering the needs of the aging veteran population.

I believe we all realize the tremendous impact and demand for services that the aging veteran population is placing and will continue to place on the VA medical care system within the next few years.

In this context, we should be aware of the following:

* in Fiscal Year 1980, 4,938 amputations were performed by the VA;

* in Fiscal Year 1982, 6,230 amputation were performed; and

* in Fiscal Year 1985, 9,397 amputations were performed within the VA health care system.

Through June 30, 1987, the VA's Prosthetic and Sensory Aids Service had an active workload of over 51,000 amputees that were provided prosthetic services. Additionally, 20,567 paraplegics/quadriplegics and nearly 139,000 hearing impaired veterans were provided some degree of VA prosthetic service.

Clearly, the need for continued improvements and refinements are needed in the areas of diagnostic procedures of diseased limbs, surgical procedures and techniques resulting in amputations and fitting techniques with improved materials used in the fabrication of permanent protheses.

Mr. Chairman, while the DAV supports full funding of the VA's research program and its stated mission, we are, nevertheless, concerned over the seemingly large disparity between funds dedicated to basic medical research versus rehabilitation research and development, as well as health systems research and development.

We remain confident that the VA and, more importantly, disabled veterans are gaining a significant return on the Agency's research dollars in the form of new and improved devices and techniques that aid the more severely disabled.

We do, however, hold to the opinion that more can and needs to be done to restore the VA to a leadership role as far as prosthetic research is concerned.

As you will recall, Mr. Chairman, this Subcommittee held a hearing on May 8, 1984, to receive testimony regarding the VA's research programs on prosthetics and rehabilitation.

At that time, the DAV testified as to what we viewed as a rather severe and counterproductive fragmentation of services that existed by the very structure of the Agency's various programs dealing with prosthetics and related research endeavors.

We find it distressing to again relate our view that the VA's prosthetic and related research programs are not fully in place and functioning as a cohesive, productive entity.

On November 7, 1984, then Administrator Harry N. Walters approved the Department of Medicine and Surgery's plans to implement yet another reorganization of prosthetics and rehabilitation research. This plan was endorsed by the interested veterans' service organizations, primarily the DAV and the Paralyzed Veterans of America.

Briefly stated, the reorganization was to be implemented in two stages, the first of which was to consist of:

* the establishment of a new position -- Deputy Assistant Chief Medical Director (ACMD) for Prosthetic Services, Research and Development -- within the Office of Clinical Affairs;

* administrative reassignment of the Rehabilitation Research and Development Service, functions and positions, from the Office of Research and Development to the Office

of Clinical Affairs under the Deputy ACMD for Prosthetic Services, Research and Development;

* administrative reassignment of the Prosthetics and Sensory Aids Service from the Deputy ACMD for Rehabilitation Services to the Deputy ACMD for Prosthetic Services, Research and Development;

* assignment of program management responsibility for the newly created Special Teams for Amputation Mobility Prosthetics/ Orthotics (STAMP) to the new Deputy ACMD; and

* establishment of an Advisory Committee to the new Deputy ACMD.

The second phase of the reorganization involved a transfer of functions and positions from the then VA Prosthetic Center, New York, New York, to the Washington, D.C. area. The plan envisioned:

* the creation of a Prosthetics Assessment and Information Center organizationally responsible to the new Deputy ACMD;

* transfer of the Office of Technology Transfer, Rehabilitation Research and Development Service, from New York to the Washington, D.C. area to be colocated with the Prosthetic Assessment and Information Center; and

* establishment of Special Teams for Amputation Mobility Prosthetics/Orthotics (STAMP).

The progress and current state of this reorganization effort can best be described as a "good news/bad news" situation. The implementation of the reorganization constituted a major undertaking from both a logistical and management standpoint. Despite some rather major setbacks and disappointments, much of the reorganization that was agreed upon and approved in 1984 is currently in place and functioning. The organizational structure, established in 1984, remains essentially appropriate today.

The task that remains for the VA is to complete the implementation efforts that have not been fulfilled and to refine some features of the program that have not yet achieved their anticipated benefits.

Some of the problems that still exist today are the result of the complexity of the reorganization itself. However, other problems must be attributed to VA Central Office management, which has failed, on occasion, to provide the necessary leadership, direction and control.

Mr. Chairman, recognizing that problems still exist in the implementation of the reorganization process, the ACMD for Clinical Affairs, established, on May 14, 1987, a Prosthetics Reorganization Post-Implementation Evaluation Task Force. This Task Force consisted on VA Central Office employees and representatives from both the Disabled American Veterans and the Paralyzed Veterans of America. The Task Force was charged to:

* evaluate whether approved recommendations of the 1984 prosthetics reorganization had been effectively accomplished;

* identify unaccomplished recommendations; and

* recommend additional actions necessary to improve the organization's ability to satisfy the mission, goals and objectives.

Mr. Chairman, this Task Force, which I was privileged to be a member of, identified 33 specific recommendations which, in the unanimous opinion of the Task Force, would substantially and meaningfully meet the goals of the proposed reorganization.

Mr. Chairman, nearly all of the 33 specific recommendations have a direct and/or indirect impact, in our view, on the Rehabilitation Research and Development Service concerning its priority areas of interest. It is the DAV's firm belief that the approval and expeditious implementation of an action plan to set these recommendations in motion will bring all prosthetic related services -- including Rehabilitation Research and Development -- into a cohesive unit that can only serve to better fulfill the mission of the VA and the needs of disabled veterans.

In the context of today's hearing, the Task Force identified one issue that we feel is certainly worthy of mention to the Subcommittee at this time.

As a part of the 1984 reorganization, a Memorandum of Understanding was prepared between the then ACMD for Professional Services (currently Clinical Affairs) and the ACMD for Research and Development. The stated purpose of the memorandum was to "...identify specific responsibilities...to insure that the Rehabilitation Research and Development (Rehab R&D) program most effectively meets its assigned mission and the goals of improved operations sought by the organizational reassignment of the Rehab R&D Service to the ACMD for Professional Services in the reorganization of prosthetics...."

That portion of the memorandum regarding budget actions was referred to as an "interim operating procedure." However, the permanent solution was clearly described as "the DACMD/PS&D, working with the ACMD for Professional Services, the ACMD for Research and Development, is charged with making formal recommendations on processes necessary to achieve a separate line item for Rehab Research and Development."

Mr. Chairman, it has been determined this Memorandum of Understanding did not result in its stated purpose. Additionally, that memorandum, identified as containing "interim operating procedures," has existed, unchanged, for nearly three years.

It is our belief that in order to meet the stated purpose of this portion of the reorganization and to streamline the budgetary procedures of the RR&D Service, action must be undertaken by the VA -- with input from all interested parties -- to revisit this issue and develop procedures to insure that an adequate budget process is developed for the RR&D Service.

Mr. Chairman, this concludes my testimony and I would like to extend our appreciation for the opportunity to present our views regarding this vital aspect of the VA's mission of providing quality health care services to this nation's disabled veterans.

SUBCOMMITTEE ON HOSPITAL AND HEALTHCARE

VETERAN ADMINISTRATION REASEARCH

SEPT. 9, 1987

OPENING STATEMENT.

Rep. Claude Harris, Jr.

Thank you Mr. Chairman. I would like to express my continued support for the VA's medical research program. These program serve a dual purpose, not only do they provide a valuable service to the veteran and fulfilling the mission of the VA to provide the highest quality of health care to veterans. But, maybe just as crucial is the enhancement of the public's health at large by the research carried out through this program.

I am also impressed by the Medical Research Program's committment to working with local universities and Medical Schools. In my own state of Alabama, the University of Alabama Birmingham, has shared a long afruitful relationship with VA. Dr. Durwood Bradley, Vice-President of the University in charge of Medical Research has confirmed that over 29 of their medical researchers and fellows are participating in VA research, over a varied spectrum of medical areas. In addition some 2. 9 million

dollars in research funds and equipment have been a part of this program. This type of research not only enhances the VA, but is especially prudent in the stratgey that our nation is using to fight AIDS. The nation will need all of its research sources to fight this disease and the VA'S relationship with university research facilites, like UAB can spearhead the effort.

Again I express my continued support and the support of citizens and veterans in our state.

Thank You, Mr. Chairman.

STATEMENT OF

DENNIS M. CULLINAN, ASSISTANT DIRECTOR
NATIONAL LEGISLATIVE SERVICE
VETERANS OF FOREIGN WARS OF THE UNITED STATES

BEFORE THE
SUBCOMMITTEE ON HOSPITALS AND HEALTH CARE
COMMITTEE ON VETERANS' AFFAIRS
UNITED STATES HOUSE OF REPRESENTATIVES

WITH RESPECT TO
VA MEDICAL RESEARCH

WASHINGTON, D. C. SEPTEMBER 9, 1987

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

On behalf of the more than 2 million members of the Veterans of Foreign Wars of the United States, I wish to thank you for this opportunity to present our views with respect to the Veterans Administration's Program of Medical Research as required under title 38, USC. The VFW readily acknowledges that by holding this hearing the Chairman and the members of this Subcommittee are demonstrating a sincere on-going concern for the enhancement of medical care provided to veterans by the Veterans Administration (VA) through the workings of its program of medical research.

The Veterans Administration's Department of Medicine and Surgery's most fundamental concern must be with the provision of first-rate health care to this nation's veterans. Thus, its primary involvement must be directly related to health care. However, in order to provide veterans with the very top level of care they have earned, the Department of Medicine and Surgery must have a state-of-the-art and properly funded research program. We must never lose sight of the fact that a viable, top quality health care system cannot exist without both research and education to expand the body of medical knowledge and enhance the provision of care. Research conducted by the Veterans Administration itself along with the research carried out in conjunction with the Department of Defense (DOD) and other entities is an essential component of the total VA health care system that serves the veteran patient both directly and indirectly.

VA research is divided into three major program areas. The first is Medical Research. Medical research is then divided into two broad categories: research on medical, dental and psychiatric problems that are specific to the veteran population and research on general health problems that are particularly prevalent among veterans. Spinal cord injury, ionizing radiation, agent orange, etc. are typically the areas which pertain specifically to the veteran population while alcoholism, various mental disorders and aging are examples of ailments that fall under the category of general health problems. VA clinicians, because of the close relation they enjoy between research and patient care, give the research program a strong clinical emphasis which directly relates to the VA's primary goal of providing quality medical care to the veteran patient. The VFW recognizes that medical research is an essential component of the VA's research program and that it has made invaluable contributions to the welfare of this nation's veterans.

The next major area under the VA's research program is Rehabilitation Research. The veteran who is functionally impaired as a result of an amputation, paralysis or the loss or impairment of his vision, hearing or speech is the direct area of concern for this program. The Veterans Administration's Department of Medicine and Surgery has made enormous contributions in this area. For example, VA studies dealing with the mechanics of human locomotion as well as hand and arm functions have lead to revolutionary improvements in both functional and cosmetic design of artificial limbs. VA research pertaining to limb motion under various conditions provided a scientific basis for the evaluation of stump behavior which enabled surgeons to develop improved amputation techniques to preserve certain muscle and tendon functions thereby allowing the improvement in the performance of prosthesis. The VA's work in this area has had a profoundly beneficial impact throughout most of the world. It is for this reason that the VFW strongly supports the area of rehabilitation research and would strongly caution against redirecting any necessary funds a way from this essential program. The VFW would point out that this particular research area offers little hope of delivering immediate profits within the private sector and were the VA in anyway to diminish its role in this area, this type of research would be seriously reduced.

The third major area under the VA's research program is Health Services Research. This research area is responsible for improving the effectiveness and efficiency of the Veterans Administration's Health Care Delivery System. VA health service's researchers develop and convey information which is intended to aide clinicians, investigators and administrators in selecting the proper medical and administrative means and procedures to best enable them to provide top quality medical care services to the veteran patient. Once again, the VA has made important inroads in this important area.

The VA's efforts in the areas of biomedical, prosthetic and rehabilitation, and health care services research is essential to affording the veteran patient proper care. This research expands the body of medical knowledge thereby increasing our understanding of the nature of various disabilities and diseases thus allowing better diagnoses and treatment. When a high quality research program exists at a given VA medical center, it strengthens health care delivery because of the close association with patient care that takes place at the facility. This leads to the validation of various treatment modalities showing some to be highly effective, others to be less so, and then revealing some to be totally ineffective. This allows for the most effective treatment of the patient and, very importantly, provides the means whereby the veteran patient can be afforded the most modern means of care while reducing the potential for harming him through the injudicious or unnecessary use of certain drugs and other medical techniques. Health care research provides the means whereby we may separate the wheat from the chaff; it determines what is effective and what is not.

In caring for this nation's aging veteran population the VA must quickly devise more effective and efficient means for providing health care, and the VA research program is playing a major role in doing just this. Of paramount concern to the Veterans of Foreign Wars is the proper provision of health care to this nation's rapidly aging veteran population. We would emphasize that our veteran population is aging much more rapidly than the population as a whole. In view of the health problems associated with advancing years, the VA's medical program now, and in the future, must be prepared for increased, diversified and more costly demand for services. It is the VA's research program which will enable the Department of Medicine and Surgery to better and more efficiently answer this challenge. For one, the Geriatric Research, Education and Clinical Centers (GRECCs) are playing an essential role in the further development of the VA's capability to provide maximally effective and appropriate care to older veterans. First implemented in 1975, GRECCs are designed to enhance the system's capability in geriatrics by conducting integrated research, education and clinical care. GRECCs represent a highly innovative and important attempt to bring together in one setting all three sides of the health care triangle, that is, education, patient care and research. This is then brought to bare on the problem of caring for this nation's rapidly aging veteran population. The stated purpose of GRECCs is to develop new knowledge regarding aging and geriatrics, to spread that knowledge through education and training of health professionals and students, and to develop and evaluate alternative models of geriatric care. The VFW recognizes GRECCs as playing an important role in the provision health care to veterans and believes it to be an essential component of the overall VA research program.

Another area of concern pertinent to research is AIDS (Acquire Immune Deficiency Syndrome). The AIDS epidemic continues to grow and has an increasingly serious impact on the VA health care system. And it is only through medical research that this dread disease will be defeated. The VA's research program will play an essential role in both devising the means to cure this disease and the methods to care for those who are now suffering from it.

The VA case load has ranged from 5.3 to 5.8 percent of the total number of cases reported to the Centers for the Disease Control (CDC) or approximately 2,100 cases of AIDS to date. The treatment of AIDS patient is labor and cost intensive. A multitude of medical specialities and subspecialites are involved as well as a large number of staff members from a variety of allied health areas, such as social work service, pharamacy and numerous others. The VA is now engaged in research across the entire spectrum of AIDS from basic science studies of the mechanism of the AIDS virus infection, through clinical trial drugs and the treatment of veteran patients with AIDS. In the area of basic research, VA laboratories are studying the mechanism by which the AIDS virus infects cells.

Despite the tremendous contribution now being made by the Veterans Administration in fighting this dread disease, it is our belief that only additional research will eventually lead to the total elimination of this dread ailment. We believe the VA, with it extensive medical research program, can play a strategic role in the formation of an AIDS policy in a search for a cure. The VFW would further

point out that for the VA to properly fulfill this profoundly difficult and important role, it must be provided appropriate funding and other resources needed to get the job done.

In summation, we would say that just as the VA's program of research is essential to the overall provision of health care to this nation's veterans, the three basic components of this research program: biomedical, prosthetic and rehabilitation, and health care services research are all essential to the overall VA research program. All three deserve and need support and funding from the Congress, and no one of these should be diminished or provided with inadequate monies for the benefit of the other. All three are very important; all three are necessary for the proper provision of health care to this nation's veterans.

Mr. Chairman this concludes my statement, I would be pleased to respond to any questions you may have.

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STATEMENT OF

MARY R. STOUT

PRESIDENT

VIETNAM VETERANS OF AMERICA

HEARINGS ON THE
MEDICAL RESEARCH PROGRAMS
OF THE VETERANS ADMINISTRATION

BEFORE THE
SUBCOMMITTEE ON HOSPITALS AND HEALTH CARE,
COMMITTEE ON VETERANS AFFAIRS
OF THE HOUSE OF REPRESENTATIVES

SEPTEMBER 9, 1987

Vietnam Veterans of America would like to extend its appreciation to the Honorable G.V. "Sonny" Montgomery, Chairman of the Subcommittee on Hospitals and Health Care, for this opportunity to comment on the important issue of the VA's program of medical research.

Philosophically, VVA believes that service-connected disabled veterans should be the highest priority for all veterans programs. While the VA theoretically endorses this priority system, the implementation of VA programs often fail to live up to the theory. No where is this more evident than in the VA's program of medical research.

Of the $212.7 million the VA has received in FY '87 for medical research, nearly 90% ($186 million) is spent on bio-medical research. This type of research is primarily analytical research that may provide beneficial results in the future. This $186 million expenditure does make a contribution to medical science, and some service-connected disabled veterans will benefit as a result. However, we seriously question the priority system of a VA budget that allocates the "lion's share" for programs that have minimal direct impact on improving health care for our nation's veterans.

While VVA acknowledges the importance of this research, we believe that some of these research dollars should be shifted into "behavioral" (covering both prosthetics and health systems) research. This research, which currently receives only slightly more than 10% of the research budget ($17.7 million for

prosthetics R&D and $8 million for health systems R&D in FY '87), needs to be bolstered.

The benefits of prosthetics R&D for service-connected disabled veterans are obvious. And the importance of health systems R&D, while less apparent, is becoming increasingly vital to the well being of the service-connected disabled.

Specifically, health systems R&D holds the most promise for improved care and treatment for veterans suffering from PTSD and other neuro-psychiatric disabilities--an area in which the VA is desperately in need of improvement.

An additional benefit from shifting some VA research dollars away from bio-medical research and into behavioral research may be the reduction of duplicated efforts. Bio-medical research, by its very nature, entails a great amount of overlapping and duplicated work. The National Institute of Health is the government agency which concerns itself with bio-medical research, and we believe it, not the VA, should have the primary responsibility for funding the government's research contribution to medical science. Meanwhile, there exists in the area of prosthetic and health systems R&D, a great need which is not being adequately met by other government agencies in terms of the needs of service-connected disabled veterans.

In summary, VVA believes that the VA medical research program is important and should be maintained. We further believe that while the total dollar figure appropriated for FY '87 may not require enhancement, there is a pressing need to

redistribute the funds among the different research areas.

We believe the needs of veterans, especially service-connected disabled veterans, should be the primary factor in determining the allocation of resources rather than the influence of the scientific medical community.

VVA strongly recommends the current 90-10 split between biomedical and behavioral research should be changed. A 60-40 split would be a far more equitable distribution of the research dollars. We maintain this formula will increase the quality of VA care and the efficiency of VA research while still providing adequate funding for bio-medical research projects.

The American Legion

For God and Country

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September 16, 1987

Honorable G.V. (Sonny) Montgomery
Chairman
House Committee on Veterans Affairs
335 Cannon House Office Bldg.
Washington, DC 20515

Dear Mr. Montgomery:

The American Legion appreciates this opportunity to present for the hearing record our views on the issues relating to medical research considered by the Subcommittee on Hospitals and Health Care during its hearing on September 9, 1987.

As has been stated on many occasions in the past, The American Legion is extremely supportive of an intense medical research program within the Veterans Administration, and such a program must be adequately funded in order to ensure that it remains viable.

As you are aware, Mr. Chairman, with regard to the VA/DOD Cooperative Medical Research Program, $12 million of the $20 million authorized has been used to support a number of current research projects initiated by the Veterans Administration which are of particular interest to the Department of Defense. The remaining $8 million will be used in FY 1988 to carry on with these programs.

We understand that new collaborative research proposals have been solicited, and some 100 such proposals are currently being reviewed. The House Armed Services Committee has recommended the continuation of this program, and an additional $25 million in funding for FY 1988. However, neither the Armed Services nor the Appropriations Committees in the Senate have considered the VA/DOD Cooperative Research Program.

The American Legion believes very strongly that such joint efforts between VA and DOD are advantageous to both agencies in addressing some very important issues arising from military service.

Examples of these are exposure to ionizing radiation and Agent Orange, Post-Traumatic Stress Disorder, and other diseases and disabilities. We support funding at the highest possible levels for such studies.

An area of special concern to The American Legion is the apparent disparity in the priority assigned and resources allocated to research efforts in the field of aging in comparison to the levels of activity in other areas of medical research.

The American Legion does not advocate any diminution in basic research or rehabilitation medicine. There is, collaterally, a very clear and pressing need for VA to address the challenge of meeting the health care needs of the aging veteran in both the near and distant future. Given the Veterans Administration's central role in both research and the training and education of health care professionals, it is important that the agency assumes a leadership role in this regard.

The VA's geriatric research efforts are conducted primarily through its Geriatric Research, Education and Clinical Centers (GRECCs). PL 96-166 mandated the establishment of 25 centers. Unfortunately, to date, only ten GRECCs are in operation with two more centers scheduled to become operational in FY 1988. However, it is our understanding that no additional funding has been provided in the FY 1988 budget for these centers. We fail to see how the GRECC program can fulfill its mission without adequate support and funding.

The American Legion believes that the Veterans Administration must more clearly identify, in a comprehensive plan, exactly how the agency will meet this tremendous challenge of the aging veteran population, with particular attention on the need for increased emphasis on geriatric research.

Mr. Chairman, The American Legion appreciates the interest of the Subcommittee on its views relating to these important issues.

Sincerely,

E. PHILIP RIGGIN, Director
National Legislative Commission

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